

SERVICE MANUAL

W241EUQ/W244EUQ/W245EUQ/W249EUQ

notebook



Notebook Computer

W241EUQ/W244EUQ/W245EUQ/W249EUQ

Service Manual

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About this Manual

This manual is intended for service personnel who have completed sufficient training to undertake the maintenance and inspection of personal computers.

It is organized to allow you to look up basic information for servicing and/or upgrading components of the **W241EUQ/W244EUQ/W245EUQ/W249EUQ** series notebook PC.

The following information is included:

Chapter 1, Introduction, provides general information about the location of system elements and their specifications.
Chapter 2, Disassembly, provides step-by-step instructions for disassembling parts and subsystems and how to upgrade elements of the system.

Appendix A, Part Lists

Appendix B, Schematic Diagrams

Appendix C, Updating the FLASH ROM BIOS

Preface

IMPORTANT SAFETY INSTRUCTIONS

Follow basic safety precautions, including those listed below, to reduce the risk of fire, electric shock and injury to persons when using any electrical equipment:

1. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
5. This product is intended to be supplied by a Listed Power Unit with an AC Input of 100 - 240V, 50 - 60Hz, DC Output of 19V, 3.42A or 18.5V, 3.5A (**65W**) minimum AC/DC Adapter.

CAUTION

This Computer's Optical Device is a Laser Class 1 Product

FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

This device may not cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operation.

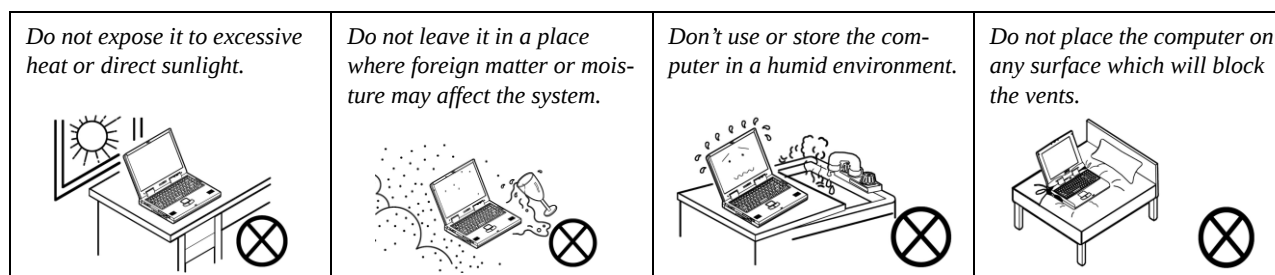
Instructions for Care and Operation

The notebook computer is quite rugged, but it can be damaged. To prevent this, follow these suggestions:

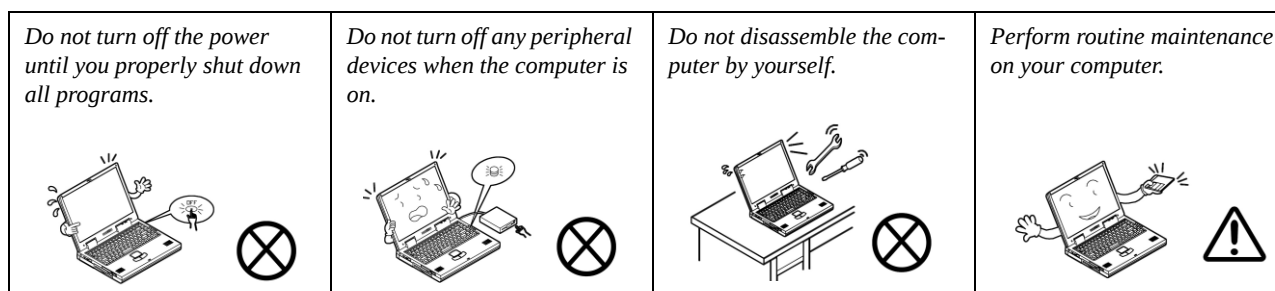
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.

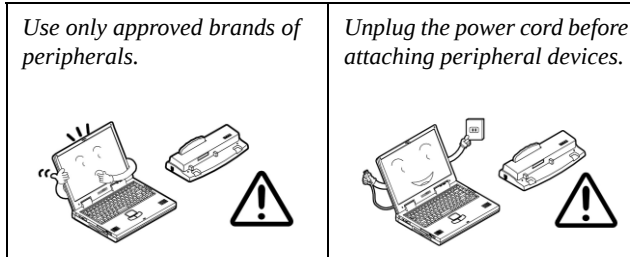


3. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.



Preface

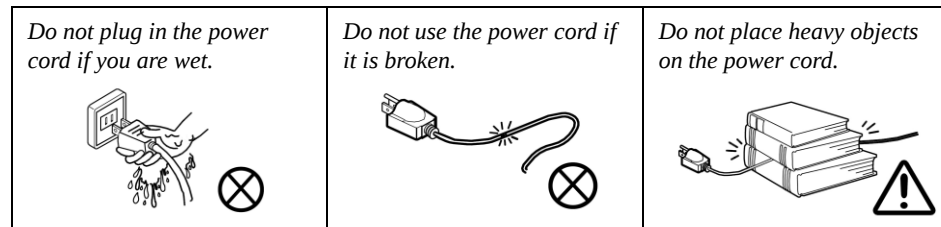
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



Power Safety

The computer has specific power requirements:

- Only use a power adapter approved for use with this computer.
- Your AC adapter may be designed for international travel but it still requires a steady, uninterrupted power supply. If you are unsure of your local power specifications, consult your service representative or local power company.
- The power adapter may have either a 2-prong or a 3-prong grounded plug. The third prong is an important safety feature; do not defeat its purpose. If you do not have access to a compatible outlet, have a qualified electrician install one.
- When you want to unplug the power cord, be sure to disconnect it by the plug head, not by its wire.
- Make sure the socket and any extension cord(s) you use can support the total current load of all the connected devices.
- Before cleaning the computer, make sure it is disconnected from any external power supplies.



Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

Battery Precautions

- Only use batteries designed for this computer. The wrong battery type may explode, leak or damage the computer.
- Do not continue to use a battery that has been dropped, or that appears damaged (e.g. bent or twisted) in any way. Even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire.
- Recharge the batteries using the notebook's system. Incorrect recharging may make the battery explode.
- Do not try to repair a battery pack. Refer any battery pack repair or replacement to your service representative or qualified service personnel.
- Keep children away from, and promptly dispose of a damaged battery. Always dispose of batteries carefully. Batteries may explode or leak if exposed to fire, or improperly handled or discarded.
- Keep the battery away from metal appliances.
- Affix tape to the battery contacts before disposing of the battery.
- Do not touch the battery contacts with your hands or metal objects.

Battery Guidelines

The following can also apply to any backup batteries you may have.

- If you do not use the battery for an extended period, then remove the battery from the computer for storage.
- Before removing the battery for storage charge it to 60% - 70%.
- Check stored batteries at least every 3 months and charge them to 60% - 70%.



Battery Disposal

The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

Caution

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

Battery Level

Click the battery icon  in the taskbar to see the current battery level and charge status. A battery that drops below a level of 10% will not allow the computer to boot up. Make sure that any battery that drops below 10% is recharged within one week.

Preface

Related Documents

You may also need to consult the following manual for additional information:

User's Manual on CD

This describes the notebook PC's features and the procedures for operating the computer and its ROM-based setup program. It also describes the installation and operation of the utility programs provided with the notebook PC.

System Startup

1. Remove all packing materials.
2. Place the computer on a stable surface.
3. Insert the battery and make sure it is locked in position.
4. Securely attach any peripherals you want to use with the computer (e.g. keyboard and mouse) to their ports.
5. Attach the AC/DC adapter to the DC-In jack on the left of the computer, then plug the AC power cord into an outlet, and connect the AC power cord to the AC/DC adapter.
6. Use one hand to raise the lid/LCD to a comfortable viewing angle (do not exceed 130 degrees); use the other hand to support the base of the computer (**Note: Never** lift the computer by the lid/LCD).
7. Press the power button to turn the computer "on".



Figure 1
Opening the Lid/LCD/Computer with AC/DC Adapter Plugged-In



Shut Down

Note that you should always shut your computer down by choosing **Shut Down** from the **Start Menu**.

This will help prevent hard disk or system problems.

Contents

Introduction1-1

Overview	1-1
Models Differences	1-1
Specifications	1-2
External Locator - Top View with LCD Panel Open	1-4
External Locator - Front & Right side Views	1-5
External Locator - Left Side & Rear View	1-6
External Locator - Bottom View	1-7
Mainboard Overview - Top (Key Parts)	1-8
Mainboard Overview - Bottom (Key Parts)	1-9
Mainboard Overview - Top (Connectors)	1-10
Mainboard Overview - Bottom (Connectors)	1-11

Disassembly2-1

Overview	2-1
Maintenance Tools	2-2
Connections	2-2
Maintenance Precautions	2-3
Disassembly Steps	2-4
Removing the Battery	2-5
Removing the Hard Disk Drive	2-6
Removing the Optical (CD/DVD) Device	2-8
Removing the System Memory (RAM)	2-9
Removing and Installing a Processor	2-10
Removing the Wireless LAN Module	2-13
Removing the 3.75G Module	2-14
Removing the Keyboard	2-15

Part ListsA-1

Part List Illustration Location	A-2
Top (W241EUQ)	A-3

Top (W245EUQ)	A-4
Top (W244EUQ)	A-5
Top (W249EUQ)	A-6
Bottom - SIM (W241EUQ, W245EUQ)	A-7
Bottom - No SIM (W241EUQ, W245EUQ)	A-8
Bottom - 3G (W244EUQ)	A-9
Bottom - No 3G (W244EUQ)	A-10
Bottom (W249EUQ)	A-11
LCD (W241EUQ)	A-12
LCD (W245EUQ)	A-13
LCD (W244EUQ)	A-14
LCD (W249EUQ)	A-15
SATA-DVD (W241EUQ, W245EUQ)	A-16
SATA-DVD (W244EUQ)	A-17
SATA-DVD (W249EUQ)	A-18
Combo (W244EUQ)	A-19

Schematic Diagrams.....B-1

System Block Diagram	B-2
Ivy Bridge Processor 1/7	B-3
Ivy Bridge Processor 2/7	B-4
Ivy Bridge Processor 3/7	B-5
Ivy Bridge Processor 4/7	B-6
Ivy Bridge Processor 5/7	B-7
Ivy Bridge Processor 6/7	B-8
Ivy Bridge Processor 7/7	B-9
DDR3 SO-DIMM_0	B-10
DDR3 SO-DIMM_1	B-11
LVDS, Inverter	B-12
HDMI, CRT	B-13
PantherPoint - M 1/9	B-14

Preface

PantherPoint - M 2/9	B-15
PantherPoint - M 3/9	B-16
PantherPoint - M 4/9	B-17
PantherPoint - M 5/9	B-18
PantherPoint - M 6/9	B-19
PantherPoint - M 7/9	B-20
PantherPoint - M 8/9	B-21
PantherPoint - M 9/9	B-22
USB 3.0, Power, WLAN	B-23
CCD, 3G, TPM	B-24
Card Reader, LAN RTL8411	B-25
LAN (RTL8411), SATA HDD, ODD	B-26
USB 3.0 TI TUSB7320	B-27
KBC-ITE IT8518	B-28
LED, MDC	B-29
Audio Codec ALC269	B-30
USB Charger, Fan, TP, Multi-Conn	B-31
System Power	B-32
VDD3, VDD5	B-33
Power 1.5V/0.75V/1.8VS	B-34
Power 1.05VS	B-35
Power 0.85VS	B-36
Power V-Core1	B-37
Power V-Core2	B-38
Charger, AC In	B-39
Click Board	B-40
Audio Board/USB	B-41
Power Switch & LID Board	B-42
External ODD Board	B-43
Updating the FLASH ROM BIOS.....	C-1

Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the **W241EUQ/W244EUQ/W245EUQ/W249EUQ** series notebook computer. Information about operating the computer (e.g. getting started, and the *Setup* utility) is in the *User's Manual*. Information about drivers (e.g. VGA & audio) is also found in *User's Manual*. That manual is shipped with the computer.

Operating systems (e.g. *Windows 7*, etc.) have their own manuals as do application software (e.g. word processing and database programs). If you have questions about those programs, you should consult those manuals.

The **W241EUQ/W244EUQ/W245EUQ/W249EUQ** series notebook is designed to be upgradeable. See [Disassembly on page 2 - 1](#) for a detailed description of the upgrade procedures for each specific component. Please note the warning and safety information indicated by the “” symbol.

The balance of this chapter reviews the computer's technical specifications and features.

Models Differences

This notebook series includes different models that vary slightly in design style, color and general appearance. Note that though your computer may look slightly different from that pictured throughout this documentation, all ports, jacks, indicators, specifications and general functions are the same for all the design styles.

Introduction

Specifications



Latest Specification Information

The specifications listed here are correct at the time of sending them to the press. Certain items (particularly processor types/speeds) may be changed, delayed or updated due to the manufacturer's release schedule. Check with your service center for more details.



CPU

The CPU is not a user serviceable part. Accessing the CPU in any way may violate your warranty.

Processor

Intel® Core™ i7 Processor

i7-3612QM (2.1GHz)

6MB L3 Cache, **22nm**, DDR3-1600MHz, TDP 35W

i7-3520M (2.90GHz)

4MB L3 Cache, **22nm**, DDR3-1600MHz, TDP 35W

Intel® Core™ i5 Processor

i5-3360M (2.80GHz), i5-3320M (2.60GHz), i5-3210M (2.50GHz)

3MB L3 Cache, **22nm**, DDR3-1600MHz, TDP 35W

Intel® Core™ i3 Processor

i3-3110M (2.40GHz)

3MB L3 Cache, **22nm**, DDR3-1600MHz, TDP 35W

Intel® Core™ i7 Processor

i7-2620M (2.7GHz)

4MB L3 Cache, **32nm**, DDR3-1333MHz, TDP 35W

Intel® Core™ i5 Processor

i5-2540M (2.60GHz), i5-2520M (2.50GHz), i5-2450M (2.50GHz), i5-2430M (2.40GHz), i5-2410M (2.30GHz)

3MB L3 Cache, **32nm**, DDR3-1333MHz, TDP 35W

Intel® Core™ i3 Processor

i3-2370M (2.40GHz), i3-2350M (2.30GHz), i3-2330M (2.20GHz), i3-2310M (2.10GHz)

3MB L3 Cache, **32nm**, DDR3-1333MHz, TDP 35W

Intel® Pentium® Processor

B970 (2.30GHz), B960 (2.20GHz), B950 (2.10GHz), B940 (2.00GHz)

2MB L3 Cache, **32nm**, DDR3-1333MHz, TDP 35W

Intel® Celeron® Processor

B840 (1.90GHz), B815 (1.60GHz), B810 (1.60GHz), B800 (1.50GHz)

2MB L3 Cache, **32nm**, DDR3-1333MHz, TDP 35W

B720 (1.70GHz), B710 (1.60GHz)

1.5MB L3 Cache, **32nm**, DDR3-1333MHz, TDP 35W

Core Logic

Intel® HM76 Chipset

Display

14" (35,56cm) HD (Thickness: 5.2mm)

Or

14" (35,56cm) HD (Thickness: 3.6mm)

Memory

Two 204 Pin SO-DIMM Sockets Supporting **DDR3 1333/1600MHz** Memory

Memory Expandable up to 8GB

(The real memory operating frequency depends on the FSB of the processor.)

Video Adapter

Intel Integrated GPU

(GPU is Dependent on Processor)

Intel® HD Graphics & Intel® HD Graphics 3000

Dynamic Frequency (Intel Dynamic Video Memory Technology for up to 1.7GB)

Microsoft DirectX®10 Compatible

Intel® HD Graphics 4000

Dynamic Frequency (Intel Dynamic Video Memory Technology for up to 1.7GB)

Microsoft DirectX®11 Compatible

BIOS

One 48Mb SPI Flash ROM
AMI BIOS

Storage

(Factory Option) One Changeable 12.7mm(h) Optical Device Type Drive (Super Multi Drive Module or Blu-Ray Combo Drive Module)
One Changeable 2.5" 9.5mm (h) SATA HDD

Security

Security (Kensington® Type) Lock Slot
BIOS Password

Audio

High Definition Audio Compliant Interface
2 * Built-In Speakers
Built-In Microphone

Pointing Device

Built-in Touchpad

Keyboard

"WinKey" keyboard (with embedded numeric keypad)

Interface

One HDMI-Out Port
One Headphone-Out Jack
One Microphone-In Jack
One RJ-45 LAN Jack
One External Monitor Port
One USB 2.0 Port
Two USB 3.0 Ports
One DC-in Jack

Card Reader

Embedded Multi-In-1 Card Reader
MMC (MultiMedia Card) / RS MMC
SD (Secure Digital) / Mini SD / SDHC/ SDXC
MS (Memory Stick) / MS Pro / MS Duo

Mini Card Slots

Slot 1 for WLAN Module or Combo WLAN and Bluetooth Module
(Factory Option) Slot 2 for 3.75G/HSPA Module

Communication

Built-In Gigabit Ethernet LAN
(Factory Option) 300K/1.3M Pixel USB PC Camera Module
(Factory Option) 3.75G/HSPA Mini-Card Module

WLAN/ Bluetooth Half Mini-Card Modules:

(Factory Option) Intel® Centrino® Wireless-N 2230 Wireless LAN **(802.11b/g/n)** + Bluetooth 4.0
(Factory Option) Intel® Centrino® Wireless-N 135 Wireless LAN **(802.11b/g/n)** + Bluetooth 4.0
(Factory Option) Third-Party Wireless LAN **(802.11b/g/n)** + Bluetooth 3.0
(Factory Option) Third-Party Wireless LAN **(802.11b/g/n)** + Bluetooth 4.0

Operating Systems

Windows® 7 (with Service Pack 1)

Power

6 Cell Smart Lithium-Ion Battery Pack, 48.84WH
(Factory Option) 6 Cell Smart Lithium-Ion Battery Pack, 62.16WH

Full Range AC/DC Adapter
AC Input: 100 - 240V, 50 - 60Hz
DC Output: 19V, 3.42A or 18.5V, 3.5A **(65W)**

Environmental Spec

Temperature
Operating: 5°C - 35°C
Non-Operating: -20°C - 60°C
Relative Humidity
Operating: 20% - 80%
Non-Operating: 10% - 90%

Dimensions & Weight

340mm (w) * 238mm (d) * 13.9 - 31.8mm (h)
2.2 kg (with 48.84WH Battery and ODD)
Or
340mm (w) * 238mm (d) * 26.25 - 34.7mm (h)
2.2 kg (with 48.84WH Battery and ODD)
Or
341mm (w) * 238.5mm (d) * 16 - 34mm (h)
2.2 kg (with 48.84WH Battery and ODD)
Or
340mm (w) * 238mm (d) * 25.05 - 33.5mm (h)
2.15 kg (with 48.84WH Battery and ODD)
Or
340mm (w) * 238mm (d) * 12 - 30.2mm (h)
2.15 kg (with 48.84WH Battery and ODD)

Introduction

Figure 1
Top View

1. Optional Built-In PC Camera
2. LCD
3. Power Button
4. Hot Key Buttons
(for some designs only)
5. LED Status Indicators
6. Keyboard
7. Built-In Microphone
8. Touchpad & Buttons

External Locator - Top View with LCD Panel Open



External Locator - Front & Right side Views



Figure 2
Front Views

1. LED Power Indicators



Figure 3
Right Side Views

1. Microphone-In Jack
2. Headphone-Out Jack
3. USB 2.0 Port
4. Optical Device Drive Bay
5. Security Lock Slot

Introduction

External Locator - Left Side & Rear View

Figure 4
Left Side View

1. DC-In Jack
2. External Monitor Port
3. RJ-45 LAN Jack
4. HDMI-Out Port
5. 2 * USB 2.0 Ports
6. Vent
7. Multi-in-1 Card Reader

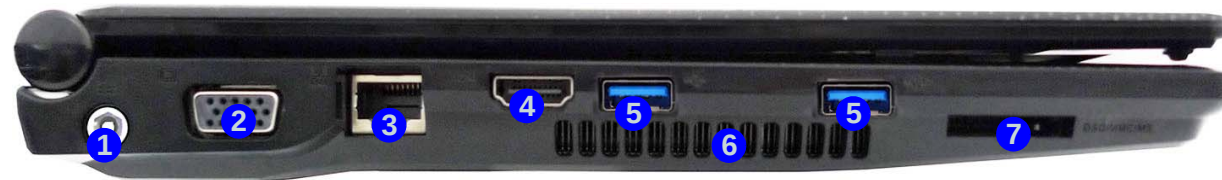


Figure 5
Rear View

1. Battery



External Locator - Bottom View

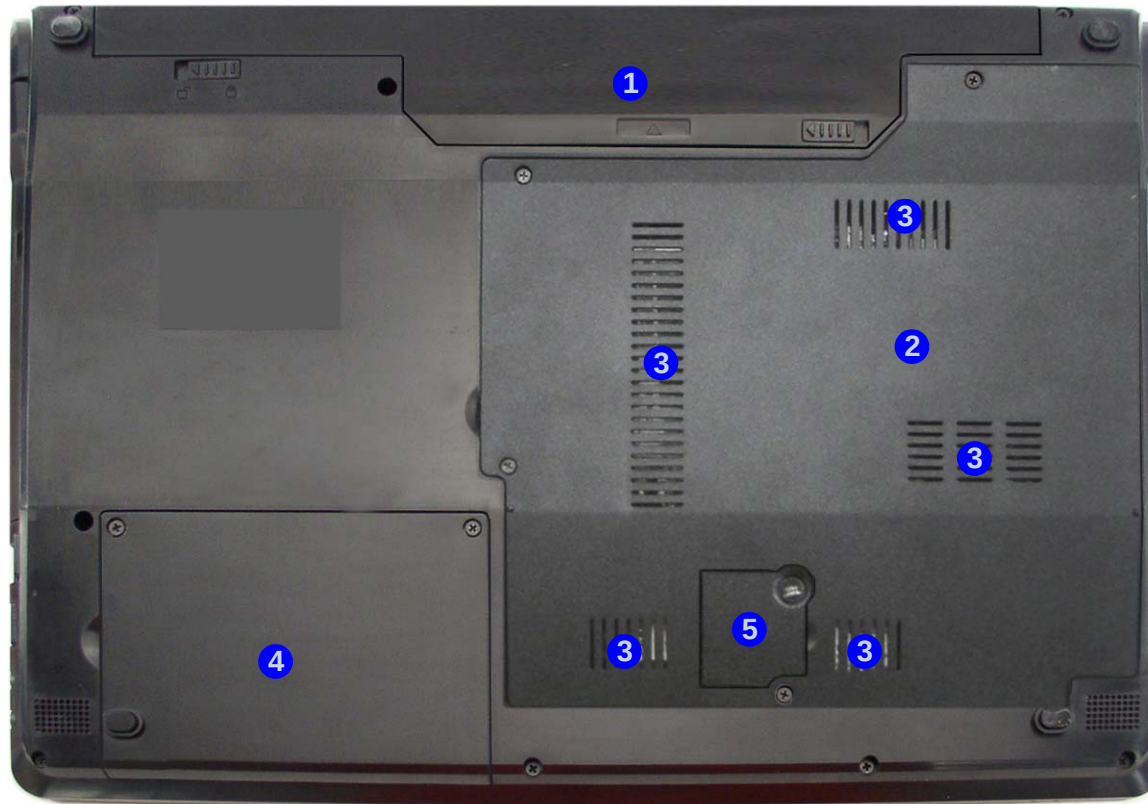


Figure 6
Bottom View

1. Battery
2. Component Bay Cover
3. Vent/Fan Intake/Outlet
4. Hard Disk Bay Cover
5. 3.75G/HSPA USIM Card Cover (optional)



Overheating

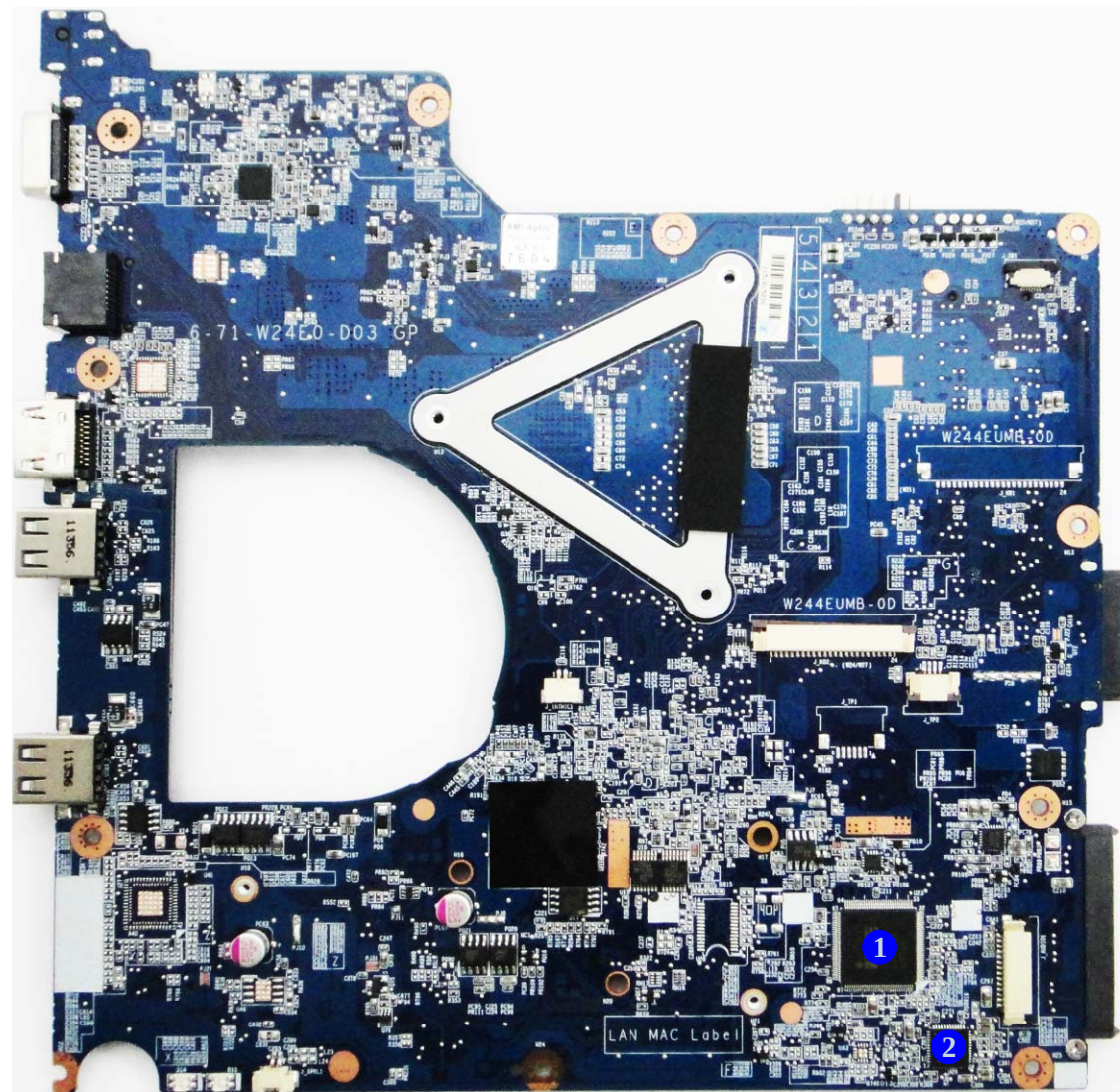
To prevent your computer from overheating make sure nothing blocks the vent/fan intakes while the computer is in use.

Introduction

Figure 7
**Mainboard Top
Key Parts**

1. ITE 8518E
2. AZALIA Codec

Mainboard Overview - Top (Key Parts)



Mainboard Overview - Bottom (Key Parts)

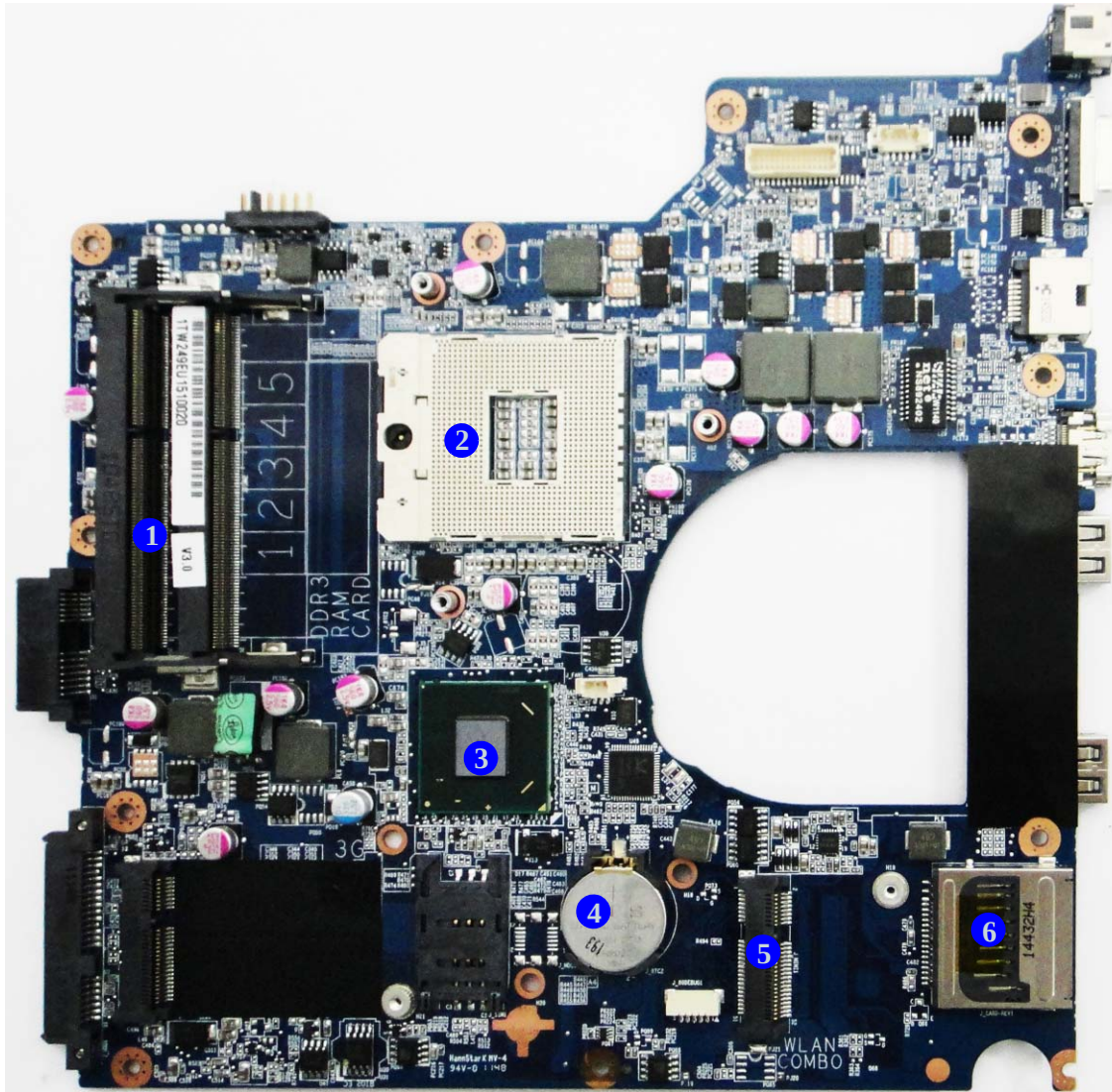


Figure 8
**Mainboard Bottom
Key Parts**

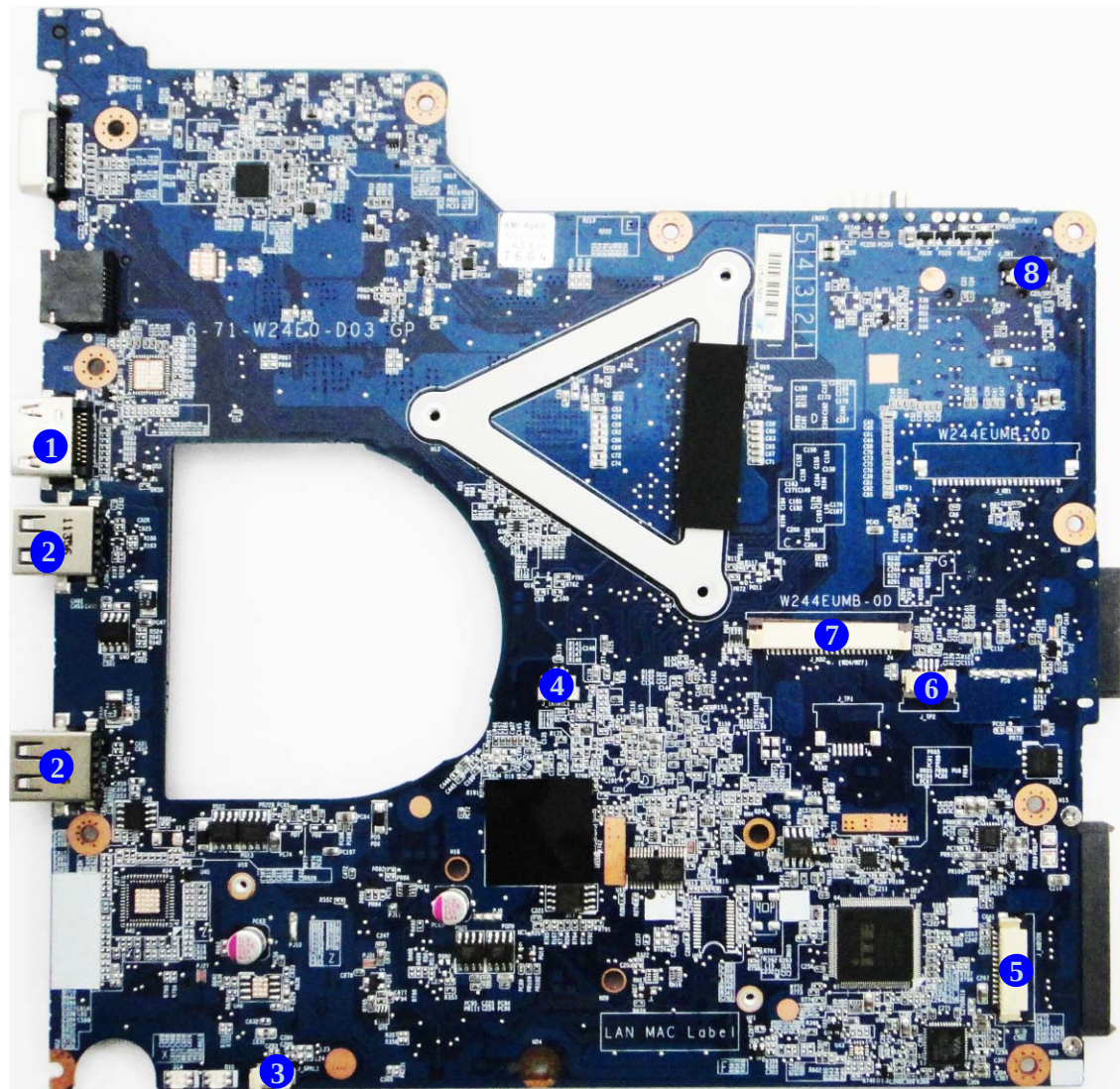
1. Memory Slots
DDR3 SO-DIMM
2. CPU Socket (No
CPU installed)
3. Intel PCH
4. CMOS Battery
5. Mini-Card
Connector (WLAN
Module)
6. Card Reader
Socket

Introduction

Figure 9
**Mainboard Top
Connectors**

1. HDMI-Out Port
2. USB Port 3.0
3. Speaker Cable Connector
4. Microphone Cable Connector
5. Audio Board Connector
6. TouchPad Cable Connector 1
7. Keyboard Cable Connector
8. Switch Board Cable Connector

Mainboard Overview - Top (Connectors)



Mainboard Overview - Bottom (Connectors)

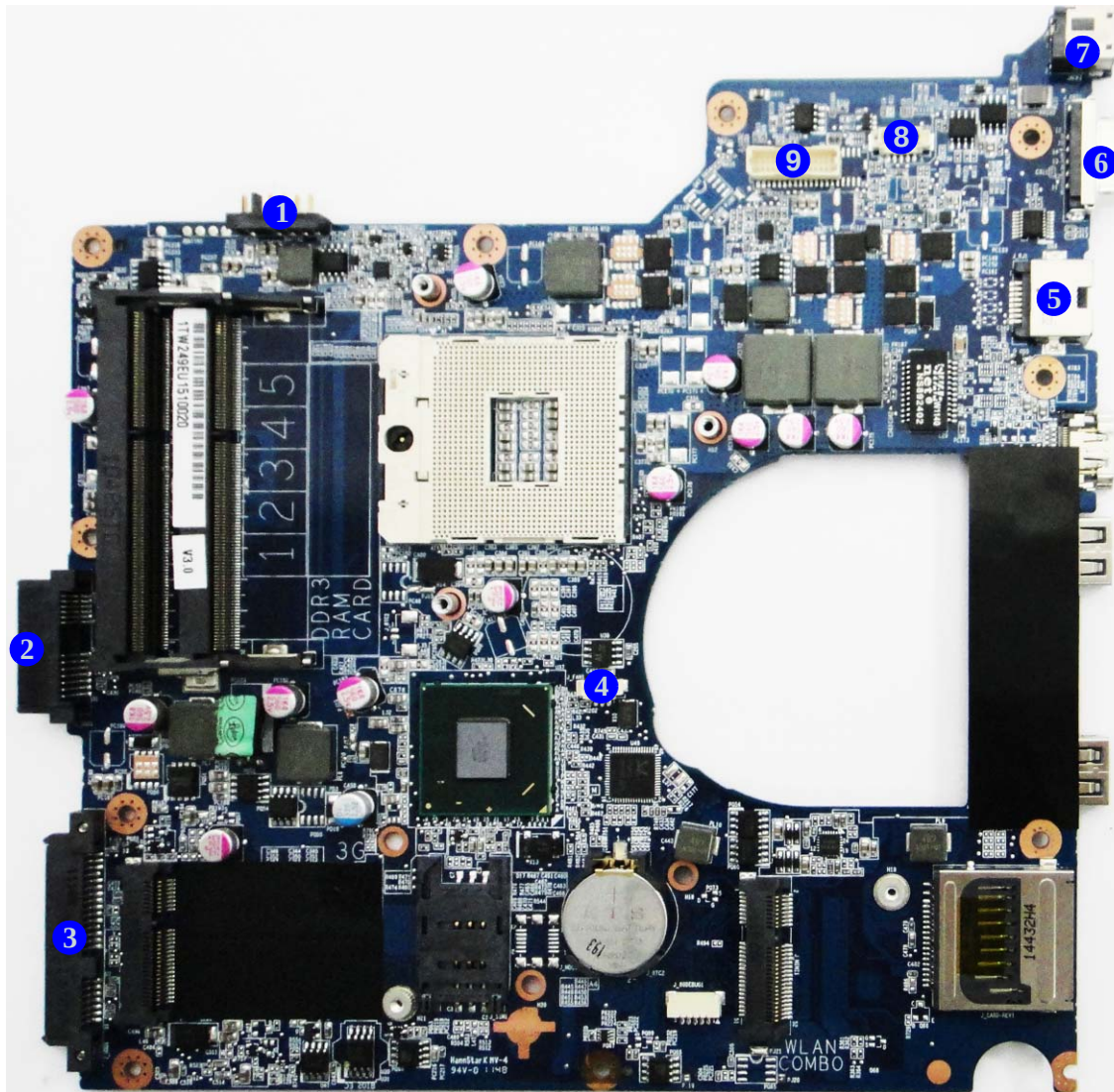


Figure 10
**Mainboard Bottom
Connectors**

1. Battery Connector
2. ODD Connector
3. HDD Connector
4. CPU Fan Cable Connector
5. RJ-45 LAN Jack
6. External Monitor Port
7. DC-In Jack
8. CCD Cable Connector
9. LCD Cable Connector

Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the **W241EUQ/W244EUQ/W245EUQ/W249EUQ** series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

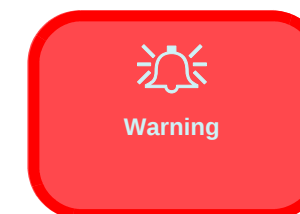
We suggest you completely review any procedure before you take the computer apart.

Procedures such as upgrading/replacing the RAM, optical device and hard disk are included in the User's Manual but are repeated here for your convenience.

To make the disassembly process easier each section may have a box in the page margin. Information contained under the figure # will give a synopsis of the sequence of procedures involved in the disassembly procedure. A box with a  lists the relevant parts you will have after the disassembly process is complete. **Note:** The parts listed will be for the disassembly procedure listed ONLY, and not any previous disassembly step(s) required. Refer to the part list for the previous disassembly procedure. The amount of screws you should be left with will be listed here also.

A box with a  will also provide any possible helpful information. A box with a  contains warnings.

An example of these types of boxes are shown in the sidebar.



Disassembly

NOTE: All disassembly procedures assume that the system is turned **OFF**, and disconnected from any power supply (the battery is removed too).

Maintenance Tools

The following tools are recommended when working on the notebook PC:

- M3 Philips-head screwdriver
- M2.5 Philips-head screwdriver (magnetized)
- M2 Philips-head screwdriver
- Small flat-head screwdriver
- Pair of needle-nose pliers
- Anti-static wrist-strap

Connections

Connections within the computer are one of four types:

Locking collar sockets for ribbon connectors	To release these connectors, use a small flat-head screwdriver to gently pry the locking collar away from its base. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.
Pressure sockets for multi-wire connectors	To release this connector type, grasp it at its head and gently rock it from side to side as you pull it out. Do not pull on the wires themselves. When replacing the connection, do not try to force it. The socket only fits one way.
Pressure sockets for ribbon connectors	To release these connectors, use a small pair of needle-nose pliers to gently lift the connector away from its socket. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.
Board-to-board or multi-pin sockets	To separate the boards, gently rock them from side to side as you pull them apart. If the connection is very tight, use a small flat-head screwdriver - use just enough force to start.

Maintenance Precautions

The following precautions are a reminder. To avoid personal injury or damage to the computer while performing a removal and/or replacement job, take the following precautions:

1. **Don't drop it.** Perform your repairs and/or upgrades on a stable surface. If the computer falls, the case and other components could be damaged.
2. **Don't overheat it.** Note the proximity of any heating elements. Keep the computer out of direct sunlight.
3. **Avoid interference.** Note the proximity of any high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage components and/or data. You should also monitor the position of magnetized tools (i.e. screwdrivers).
4. **Keep it dry.** This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.
5. **Be careful with power.** Avoid accidental shocks, discharges or explosions.
 - Before removing or servicing any part from the computer, turn the computer off and detach any power supplies.
 - When you want to unplug the power cord or any cable/wire, be sure to disconnect it by the plug head. Do not pull on the wire.
6. **Peripherals** – Turn off and detach any peripherals.
7. **Beware of static discharge.** ICs, such as the CPU and main support chips, are vulnerable to static electricity. Before handling any part in the computer, discharge any static electricity inside the computer. When handling a printed circuit board, do not use gloves or other materials which allow static electricity buildup. We suggest that you use an anti-static wrist strap instead.
8. **Beware of corrosion.** As you perform your job, avoid touching any connector leads. Even the cleanest hands produce oils which can attract corrosive elements.
9. **Keep your work environment clean.** Tobacco smoke, dust or other air-born particulate matter is often attracted to charged surfaces, reducing performance.
10. **Keep track of the components.** When removing or replacing any part, be careful not to leave small parts, such as screws, loose inside the computer.

Cleaning

Do not apply cleaner directly to the computer, use a soft clean cloth.

Do not use volatile (petroleum distillates) or abrasive cleaners on any part of the computer.



Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

Disassembly Steps

The following table lists the disassembly steps, and on which page to find the related information. **PLEASE PERFORM THE DISASSEMBLY STEPS IN THE ORDER INDICATED.**

To remove the Battery:

1. Remove the battery [page 2 - 5](#)

To remove the HDD:

1. Remove the battery [page 2 - 5](#)
2. Remove the HDD [page 2 - 6](#)

To remove the Optical Device:

1. Remove the battery [page 2 - 5](#)
2. Remove the optical device [page 2 - 8](#)

To remove the System Memory:

1. Remove the battery [page 2 - 5](#)
2. Remove the system memory [page 2 - 9](#)

To remove and install a Processor:

1. Remove the battery [page 2 - 5](#)
2. Remove the processor [page 2 - 10](#)
3. Install the processor [page 2 - 12](#)

To remove the WLAN Module:

1. Remove the battery [page 2 - 5](#)
2. Remove the wireless LAN [page 2 - 13](#)

To remove the 3.75G Module:

1. Remove the battery [page 2 - 5](#)
2. Remove the 3.75G [page 2 - 14](#)

To remove the Keyboard:

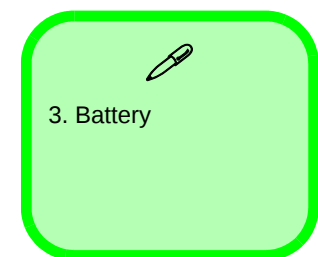
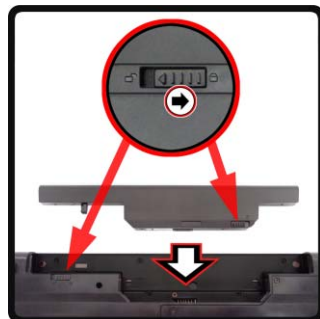
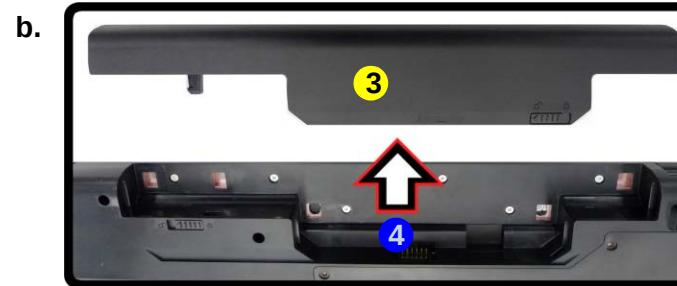
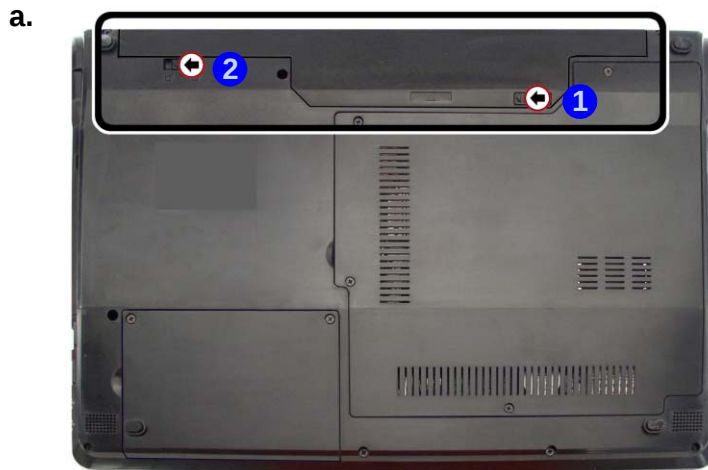
1. Remove the battery [page 2 - 5](#)
2. Remove the keyboard [page 2 - 15](#)

Removing the Battery

1. Turn the computer **off**, and turn it over.
2. Slide the latch **1** in the direction of the arrow (*Figure 1a*).
3. Slide the latch **2** in the direction of the arrow, and hold it in place (*Figure 1a*).
4. Slide the battery **3** in the direction of the arrow **4** (*Figure 1b*).

Figure 1
Battery Removal

- a. Slide the latch and hold it in place.
- b. Slide the battery in the direction of the arrow.



Disassembly

Figure 2
**HDD Assembly
Removal**

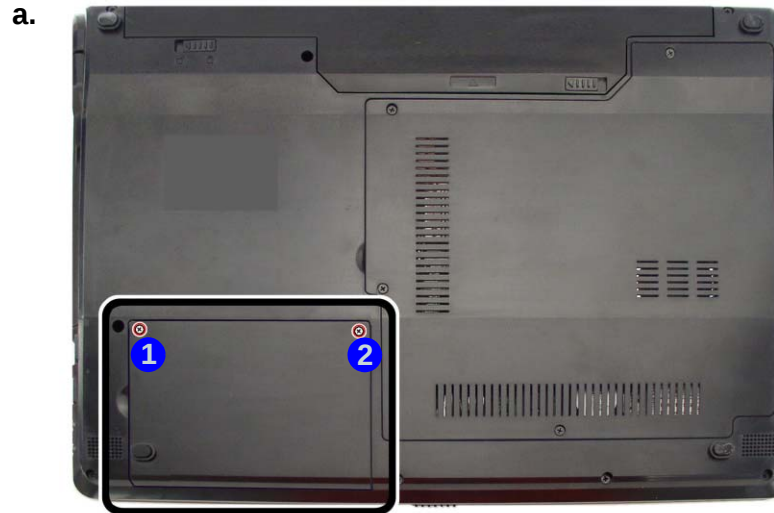
Removing the Hard Disk Drive

The hard disk drive can be taken out to accommodate other 2.5" serial (SATA) hard disk drives with a height of 9.5mm (h). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in **Chapter 4 of the User's Manual**) when setting up a new hard disk.

- a. Locate the HDD bay cover and remove the screws.

Hard Disk Upgrade Process

1. Turn **off** the computer, and remove the battery ([page 2 - 5](#)).
2. Locate the hard disk bay cover and remove screws ① & ② ([Figure 2a](#)).



- 2 Screws



HDD System Warning

New HDD's are blank. Before you begin make sure:

You have backed up any data you want to keep from your old HDD.

You have all the CD-ROMs and FDDs required to install your operating system and programs.

If you have access to the internet, download the latest application and hardware driver updates for the operating system you plan to install. Copy these to a removable medium.

3. Remove the hard disk bay cover **3** (*Figure 3b*).
4. Grip the tab and slide the hard disk in the direction of arrow **4** (*Figure 3c*).
5. Lift the hard disk assembly **5** out of the bay **6** (*Figure 3d*).
6. Remove the screw **7** - **10** and the mylar cover **11** from the hard disk **12** (*Figure 3e*).
7. Reverse the process to install a new hard disk (do not forget to replace all the screws and covers).

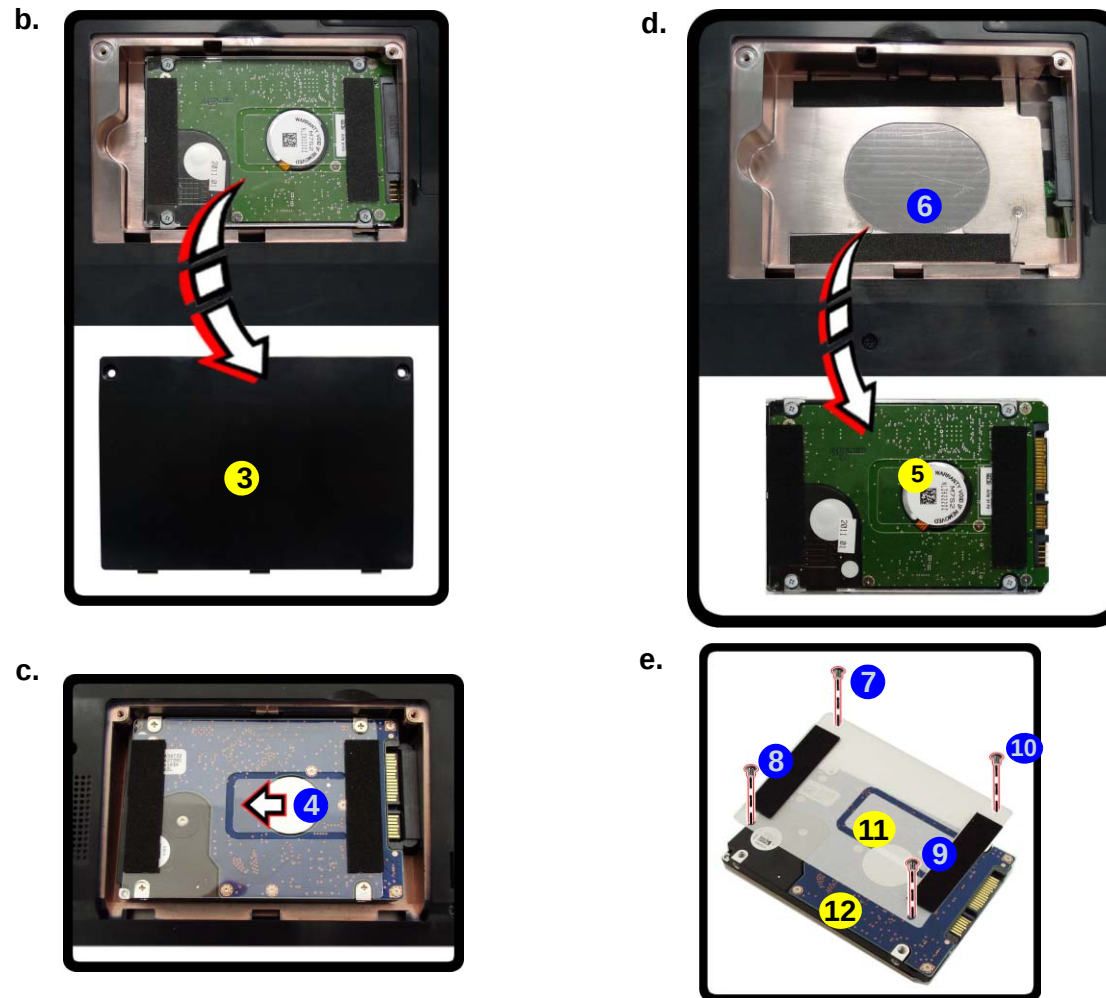


Figure 3
**HDD Assembly
Removal (cont'd.)**

- b. Remove the HDD bay cover.
- c. Grip the tab and slide the HDD assembly in the direction of the arrow.
- d. Lift the HDD assembly out of the bay.
- e. Remove the screws and mylar cover.



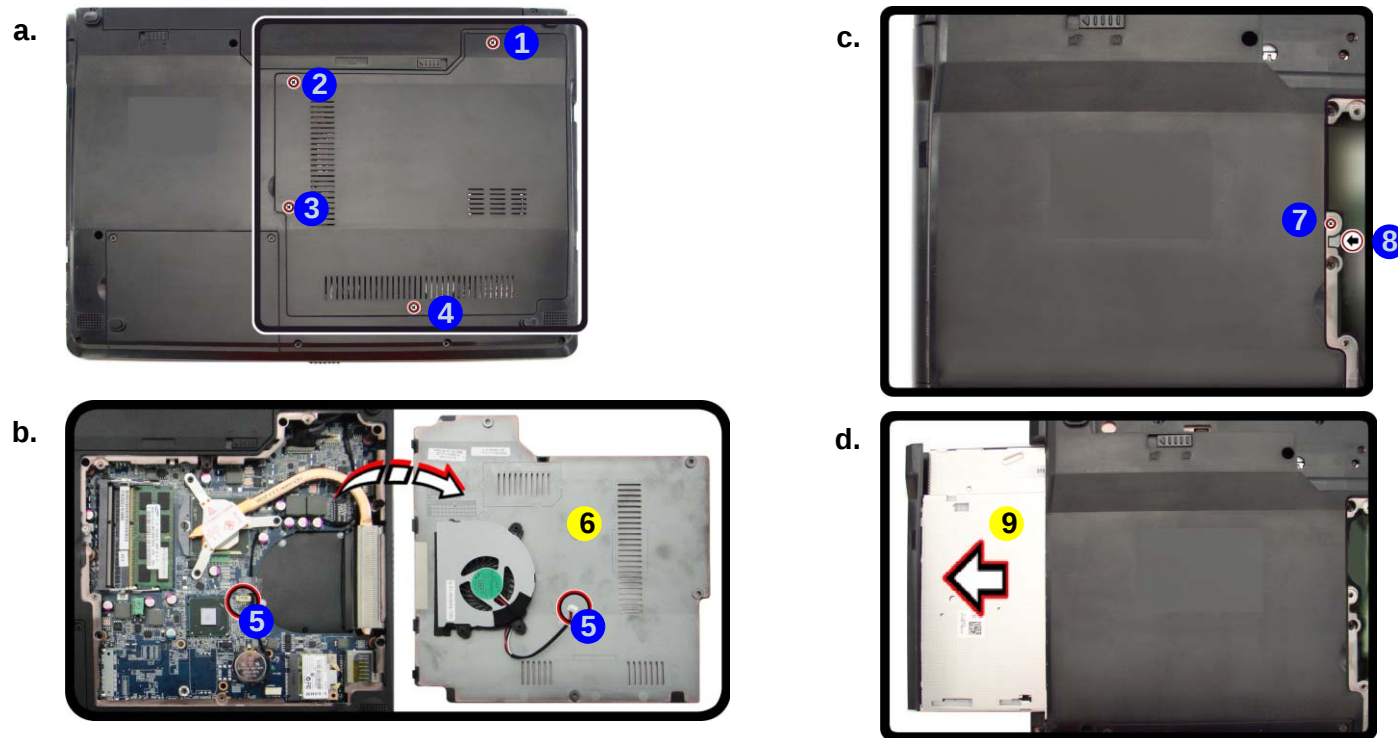
Disassembly

Figure 4
**Optical Device
Removal**

- a. Remove the screws.
- b. Remove the bay cover.
- c. Remove the screw at point 7 and use a screwdriver to carefully push out the optical device at point 8.
- d. Remove the optical device.

Removing the Optical (CD/DVD) Device

1. Turn **off** the computer, remove the battery ([page 2 - 5](#)).
2. Locate the component bay cover and remove screws 1 - 4 ([Figure 4a](#)).
3. Carefully (**a fan and cable are attached to the under side of the cover**) lift up the bay cover.
4. Carefully disconnect the fan cable 5, and remove the cover 6 ([Figure 4b](#)).
5. Remove the screw at point 7, and use a screwdriver to carefully push out the optical device at point 8 ([Figure 4c](#)).
6. Insert the new device and carefully slide it into the computer (the device only fits one way. DO NOT FORCE IT; The screw holes should line up).
7. Restart the computer to allow it to automatically detect the new device.



6. Component Bay Cover
9. Optical Device
- 4 Screws

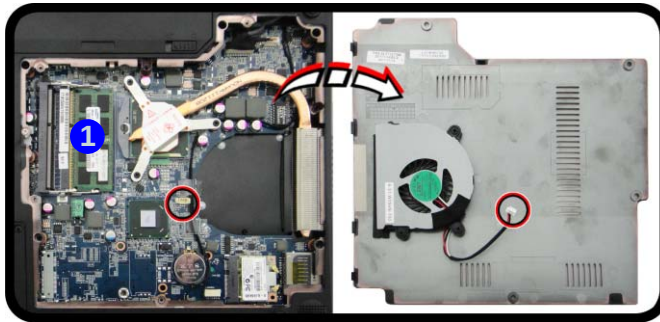
Removing the System Memory (RAM)

The computer has one memory socket for 200 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting **DDR3** 1333/ 1066MHz. The main memory can be expanded up to 4GB. The SO-DIMM modules supported are 1GB, 2GB and 4GB and **DDRIII** Modules. The total memory size is automatically detected by the POST routine once you turn on your computer.

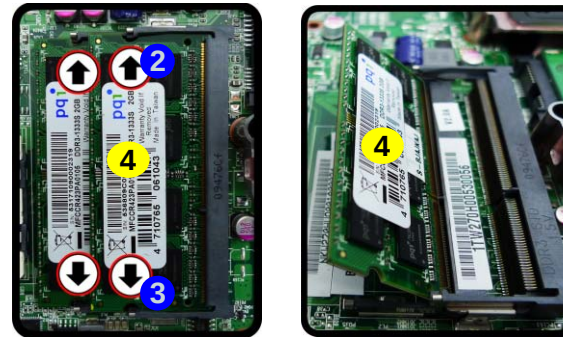
Memory Upgrade Process

1. Turn **off** the computer, remove the battery ([page 2 - 5](#)) and the component bay cover ([page 2 - 8](#)).
2. The RAM modules will be visible at point **1** on the main board.
3. Gently pull the two release latches (**2** & **3**) on the sides of the memory socket.
4. The RAM module **4** will pop-up, and you can then remove it.

a.



b.



5. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
6. The module's pin alignment will allow it to only fit one way. Make sure the module is seated as far into the slot as it will go. **DO NOT FORCE** the module; it should fit without much pressure.
7. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
8. Replace the bay cover by inserting it at an angle and aligning the cover pins.
9. Replace the screws (**make sure you reconnect the fan cable before replacing all the screws and screwing down the bay cover**).
10. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

Figure 5
RAM Module
Removal

- a. Locate the memory socket.
- b. Remove the module.



Contact Warning

Be careful not to touch the metal pins on the module's connecting edge. Even the cleanest hands have oils which can attract particles, and degrade the module's performance.



4. RAM Module

Disassembly

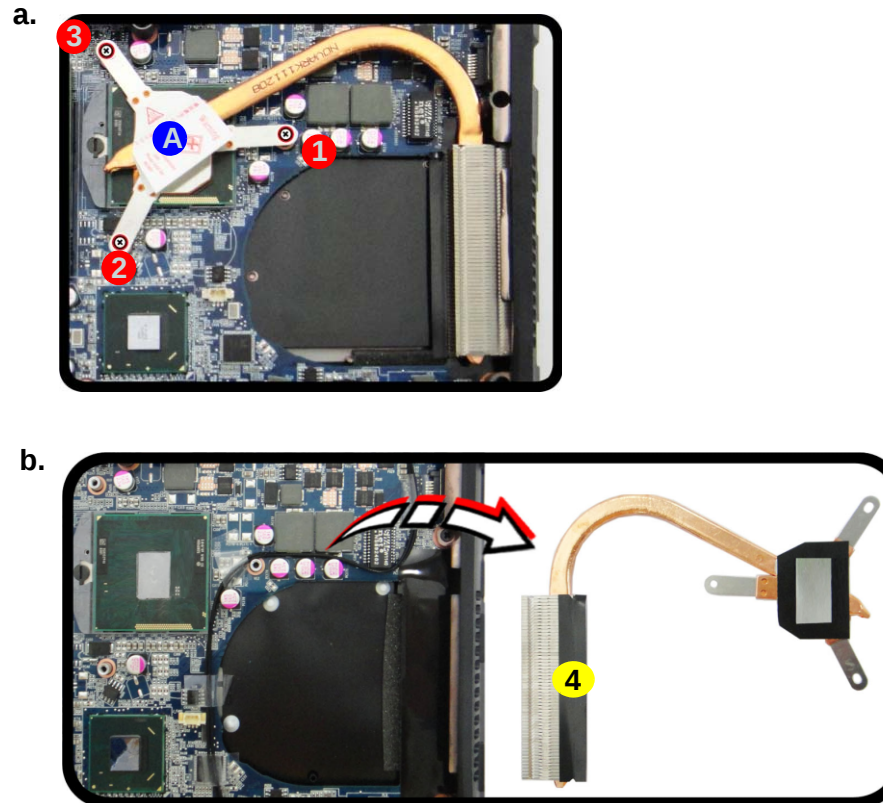
Figure 6
Processor Removal

- a. The CPU heat sink will be visible at point **A**. Remove the screws from the CPU heatsink.
- b. Grip the heat sink tab and carefully lift the heat sink up and off the computer.

Removing and Installing a Processor

Processor Removal Procedure

1. Turn **off** the computer, turn it over, and remove the battery ([page 2 - 5](#)) and the component bay cover ([page 2 - 8](#)).
2. The CPU heat sink will be visible at point **A** ([Figure 6a](#)).
3. Loosen the CPU heat sink screws in the order **3**, **2** & **1** (the reverse order as indicated on the label [Figure 6a](#)).
4. Grip the heat sink tab and carefully lift the heat sink **7** up and off the computer ([Figure 6b](#)).



4. Heat Sink

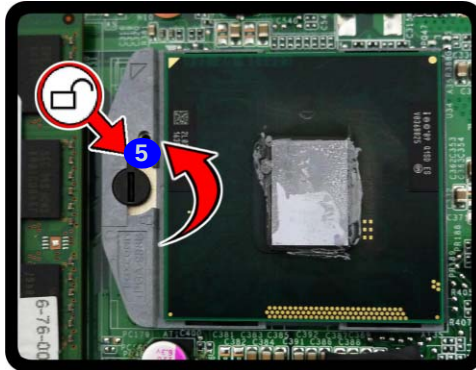
- 3 Screws

5. Turn the release latch **5** towards the unlock symbol  to release the CPU (**Figure 7d**).
6. Carefully (it may be hot) lift the CPU **6** up and out of the socket (**Figure 7e**).
7. Reverse the process to install a new CPU.
8. When re-inserting the CPU, pay careful attention to the pin alignment, it will fit only one way (DO NOT FORCE IT!).

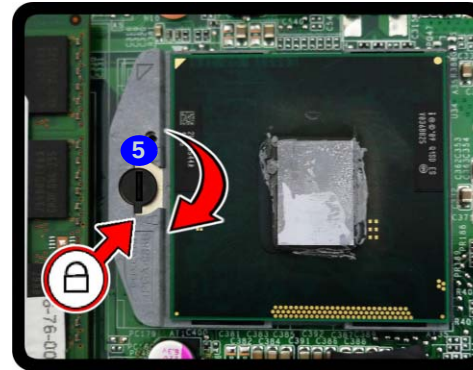
Figure 7
Processor Removal
(cont'd)

- c. Turn the release latch to unlock the CPU.
- d. Lift the CPU out of the socket.

c.

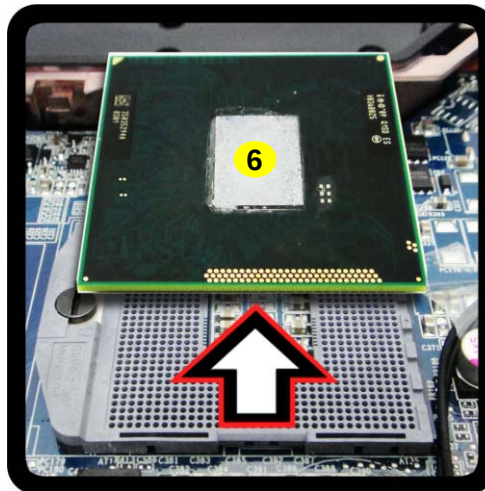


Unlock



Lock

d.



Caution

The heat sink, and CPU area in general, contains parts which are subject to high temperatures. Allow the area time to cool before removing these parts.



6. CPU

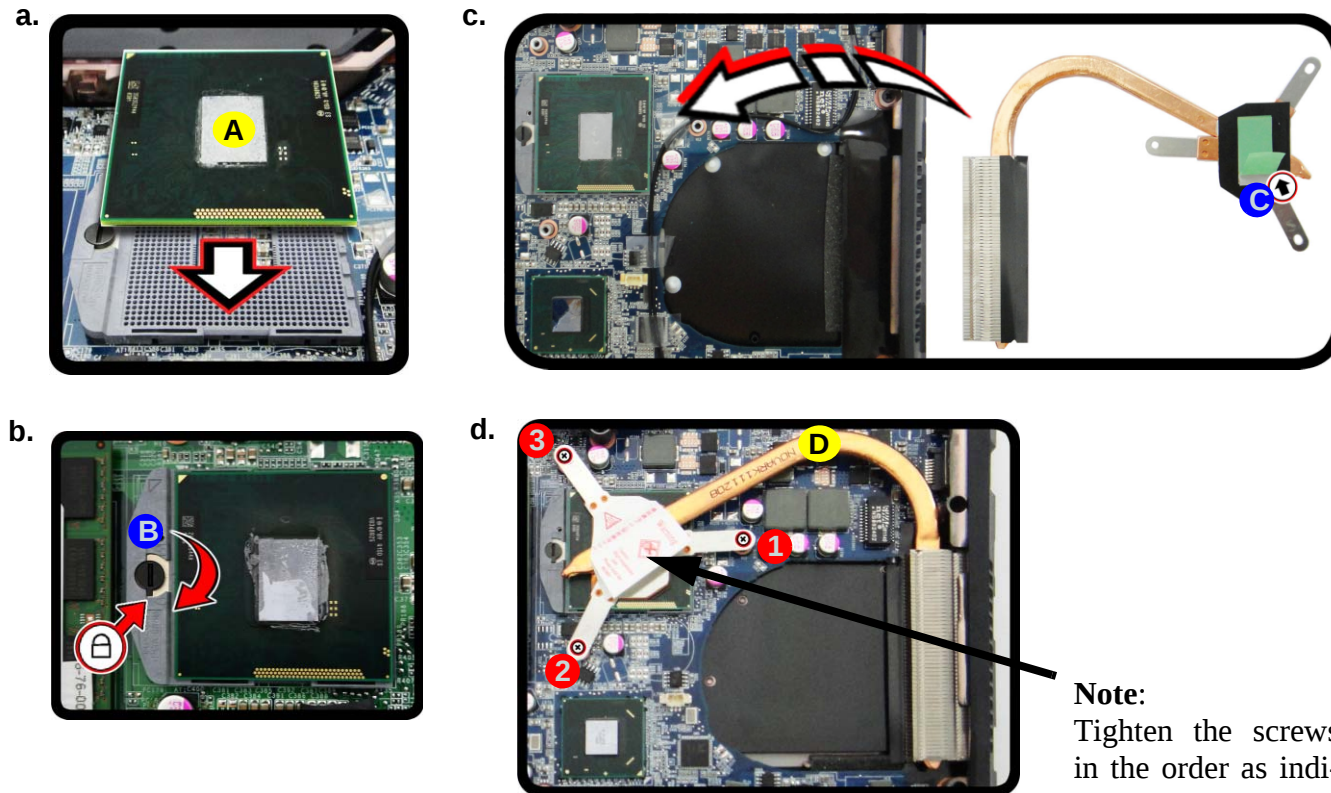
Disassembly

Figure 8
Processor Installation

- Insert the CPU.
- Turn the release latch towards the lock symbol.
- Remove the sticker from the heat sink and insert the heat sink.
- Tighten the screws.

Processor Installation Procedure

- Insert the CPU **A** (*Figure 8a*), pay careful attention to the pin alignment, it will fit only one way (DO NOT FORCE IT!), and turn the release latch **B** towards the lock symbol  (*Figure 8b*).
- Remove the sticker **C**** (*Figure 8c*) from the heat sink.
- Insert the heat sink **D** as indicated in *Figure 8d*.
- Tighten the CPU heat sink screws in the order **1**, **2** & **3** (the order as indicated on the label and *Figure 8d*).
- Replace the component bay cover (don't forget to replace the fan cable) and tighten the screws (*page 2 - 14*).



Note:
Tighten the screws
in the order as indicated
on the label.

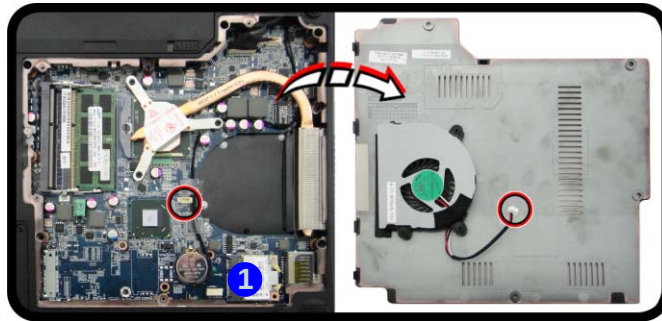
A. CPU
D. Heat Sink

- 3 Screws

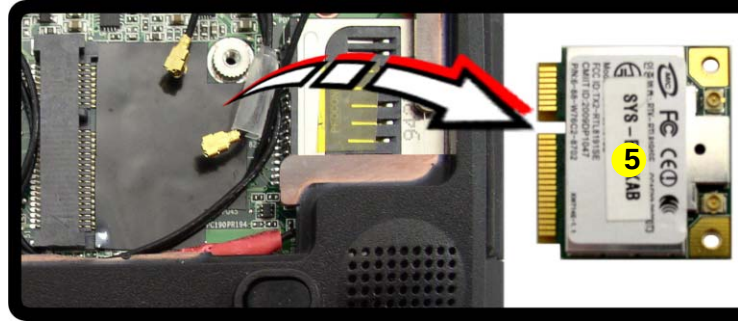
Removing the Wireless LAN Module

1. Turn **off** the computer, remove the battery ([page 2 - 5](#)) and the component bay cover ([page 2 - 8](#)).
2. The Wireless LAN module will be visible at point **1** on the mainboard.
3. Carefully disconnect cables **2** - **3**, then remove screw **4** from the module socket ([Figure 9b](#)).
4. Lift the Wireless LAN module **5** ([Figure 9c](#)) up and off the computer.

a.



c.



b.

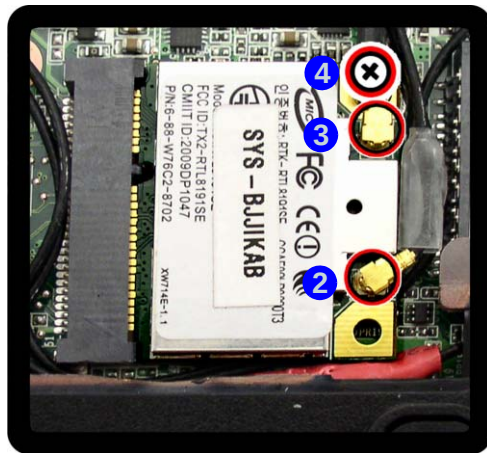


Figure 9
**Wireless LAN
Module Removal**

- a. Remove the cover.
- b. Disconnect the cables and remove the screw.
- c. Lift the WLAN module out.

Note: Make sure you reconnect the antenna cable to '1' + '2' socket ([Figure 9b](#)).



5. WLAN Module.

- 1 Screw

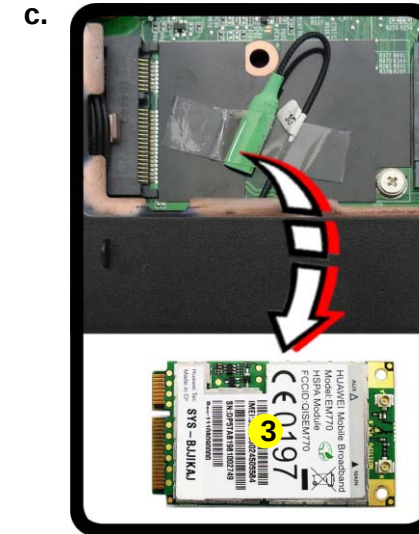
Disassembly

Figure 10
**3.75G Module
Removal**

- Disconnect the cable and remove the screw.
- The 3.75G module will pop up.
- Lift the 3.75G module out.

Removing the 3.75G Module

- Turn **off** the computer, remove the battery ([page 2 - 5](#)) and the component bay cover ([page 2 - 8](#)).
- Carefully disconnect the cable **①**, then remove the screw **②** from the module socket.
- The 3.75G module **③** will pop-up.
- Lift the 3.75G module ([Figure 10d](#)) up and off the computer.



3. 3.75G Module.

- 1 Screw

Removing the Keyboard

1. Turn **off** the computer, and remove the battery ([page 2 - 5](#)).
2. Remove screws **1** - **4** from the bottom of the computer. Press at points **5** to unsnap the LED cover module **6** (you may need to use the Eject Pin Tool to do this ([Figure 11a](#))).
3. Remove the LED cover module **6** and screws **7** - **11** from the keyboard ([Figure 11b](#)).
4. Carefully lift the keyboard up, being careful not to bend the keyboard ribbon cable **12**. Disconnect the keyboard ribbon cable **12** from the locking collar socket **13** ([Figure 11c](#)).
5. Carefully lift up the keyboard **14** ([Figure 11d](#)) off the computer.

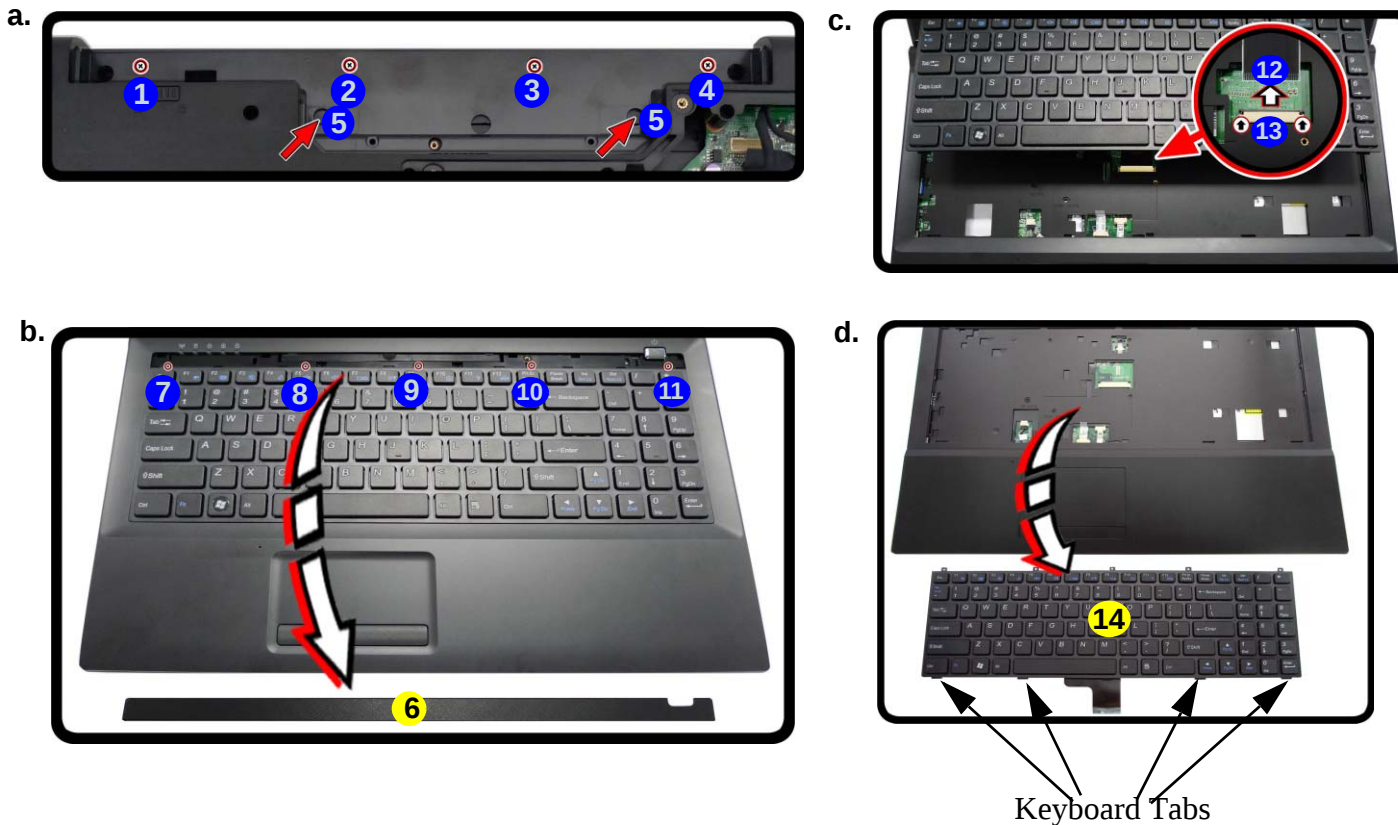


Figure 11
Keyboard Removal

- a. Remove screws from the bottom of the computer. Press at points **5** to unsnap the LED cover module.
- b. Remove the LED cover module and screws from the keyboard.
- c. Carefully lift the keyboard up and disconnect the keyboard ribbon cable from the locking collar socket.
- d. Remove the keyboard.



Re-Inserting the Keyboard

When re-inserting the keyboard firstly align the **four** keyboard tabs at the bottom ([Figure 11c](#)) at the bottom of the keyboard with the slots in the case.



6. LED Cover Module
14. Keyboard

- 9 Screws

Appendix A: Part Lists

This appendix breaks down the *W241EUQ/W244EUQ/W245EUQ/W249EUQ* series notebook’s construction into a series of illustrations. The component part numbers are indicated in the tables opposite the drawings.

Note: This section indicates the *manufacturer’s* part numbers. Your organization may use a different system, so be sure to cross-check any relevant documentation.

Note: Some assemblies may have parts in common (especially screws). However, the part lists DO NOT indicate the total number of duplicated parts used.

Note: Be sure to check any update notices. The parts shown in these illustrations are appropriate for the system at the time of publication. Over the product life, some parts may be improved or re-configured, resulting in *new* part numbers.

Part List Illustration Location

The following table indicates where to find the appropriate part list illustration.

Table A- 1
Part List Illustration
Location

Parts	W241EUQ	W245EUQ	W244EUQ	W249EUQ
Top	page A - 3	page A - 4		page A - 6
Top - No Fig			page A - 5	
Bottom - SIM	page A - 7			
Bottom - No SIM	page A - 8			
Bottom - 3G			page A - 9	
Bottom - No 3G			page A - 10	
Bottom				page A - 11
LCD	page A - 12	page A - 13	page A - 14	page A - 15
SATA DVD	page A - 16		page A - 17	page A - 18
Combo			page A - 19	

Top (W241EUQ)

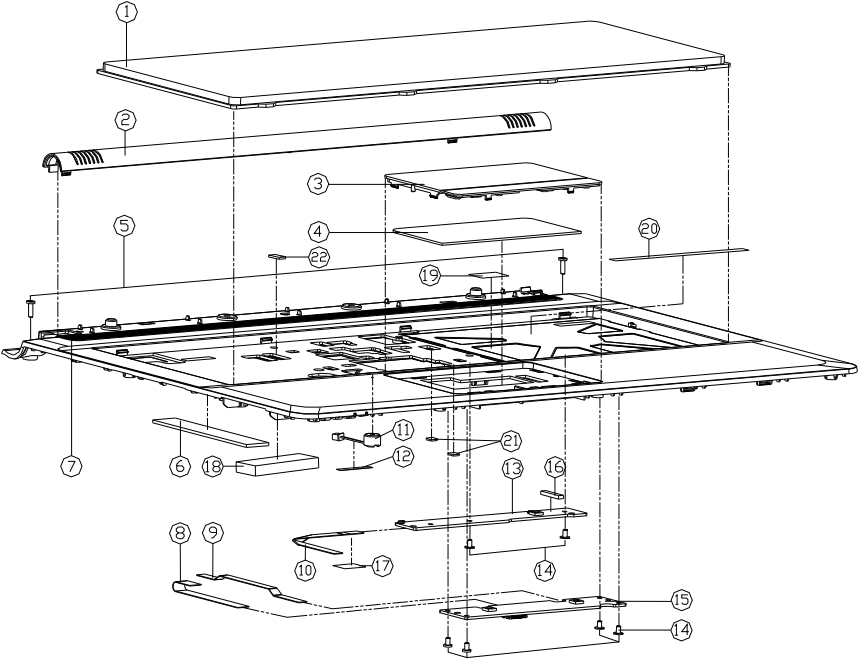
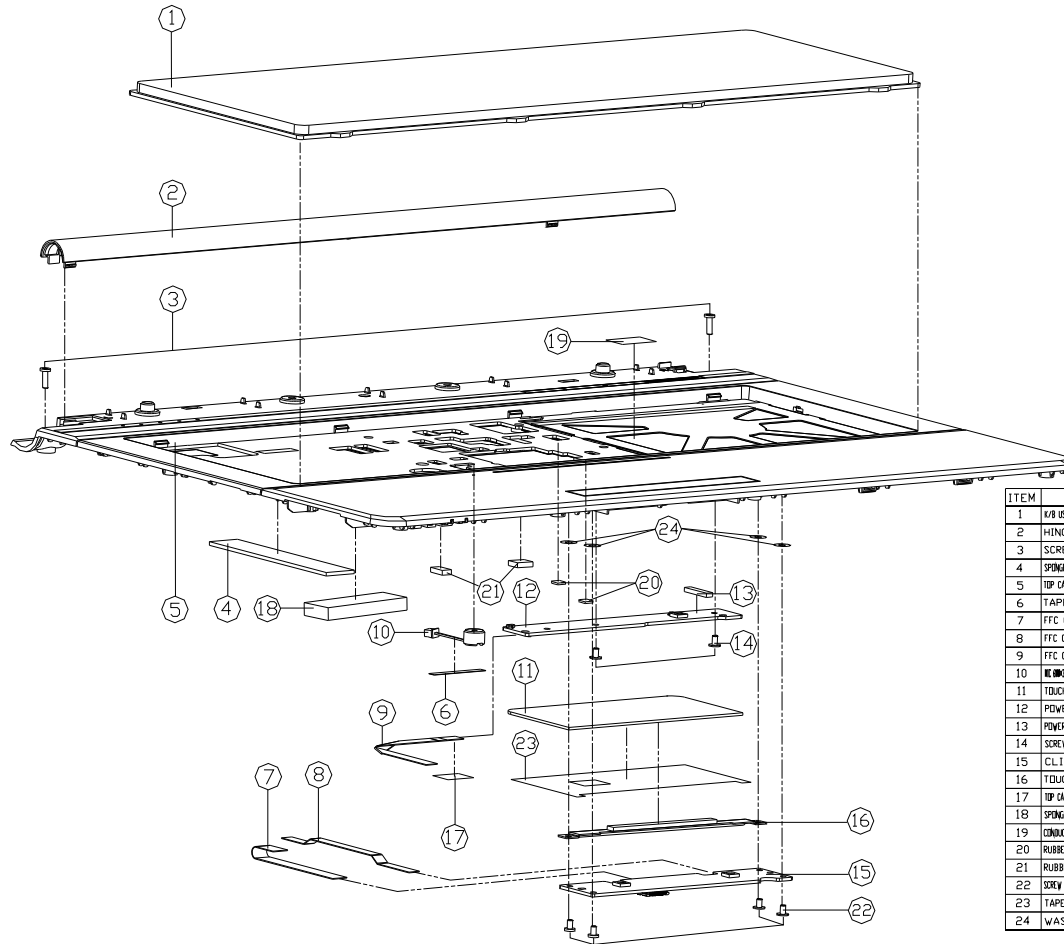


Figure A - 1
Top (W241EUQ)

ITEM	PART	NAME	PART NO	REMARK
1	KEY	KEY VISTA KEY	6-80-W8410-011-1	
2	HINGE COVER	(PC+ABS) C4501	6-42-C4512-031	
3	TP COVER MODULE	(MATT UV PAINT) C4501	6-42-C4512-101	
4	TOUCH PAD SYMPHONY	TN-01146-003 C4800	6-49-C4802-010	
5	SCREW	M2.5*BL K1 BK/Z NY ICT	6-35-B6125-BRO	
6	SPONGE	FOR TOP CASE (S76402) (S65-S65) C4800	6-47-0019A-570	
7	TOP CASE	MODULE CHANGE POWER RIB C4501-C	6-39-C4512-015-C	
8	FFC CABLE	FOR TOUCH PAD 6PIN C4500	6-43-C4502-010	
9	FFC CABLE	FOR W/B TO CLICK BOARD C4500	6-43-C4500-022	
10	FFC CABLE	FOR W/B TO POWER BOARD C4500	6-43-C4500-031	
11	KEY	KEY VISTA KEY	6-80-W8410-011-1	
12	TAPE	MYLAR (B) MYLAR M550J	6-40-M55J2-020	
13	POWER SWITCH BOARD	V30 W244EUQ	6-77-W24ES-D03	
14	KEY	KEY VISTA KEY	6-35-B1120-3RE	
15	CLICK BOARD	V1.0 W244EUQ	6-77-W24E2-D01	
16	POWER BOARD	SPONGE (S65-S65) C4800 C4500	6-47-C4502-021	
17	TOP CASE	FFC MODULE CHANGE LENGTH C4500	6-40-C4502-031	
18	SPONGE	S65 (S76402) FOR TOP CASE C4800	6-47-0019A-390	
19	CONDUCTIVE CLOTH	(S76402) FOR TOP CASE C4800	6-47-E4122-010	
20	TOP CASE	(E4122) (S76402) C4800 (S76402)	6-47-C4502-030-1	
21	RUBBER	(S76402) SILICON TO THE M6750U	6-47-M67U1-040	
22	GASKET	(S76402) FOR TOP CASE C4800	6-47-0019A-60A	

Part Lists

Top (W245EUQ)

Figure A - 2
Top (W245EUQ)

ITEM	PART NAME	PART NO	REMARK
1	K/S USA W-002305-430 W/041100 WITH VISTA KEY	6-80-W8470-011-1	
2	HINGE COVER (PC+ABS) C4505	6-42-C4552-031	
3	SCREW M2.5*BL KI BK/Z NY ICT	6-35-B6125-8R0	
4	SPONGE FOR TOP CASE (57*64*2) (S955-S9NY G4000)	6-47-0019A-570	
5	TOP CASE MODULE C4505-C (KEY+BUTTON CHANGE)	6-39-C4552-013-C	
6	TAPE MYLAR (C) MYLAR M550J	6-40-M55J2-020	
7	FFC CABLE FOR TOUCH PAD 6PIN C4500	6-43-C4502-010	
8	FFC CABLE FOR M/B TO CLICK BOARD C4500	6-43-C4500-022	
9	FFC CABLE FOR M/B TO POWER BOARD C4500	6-43-C4500-031	
10	WASHER 06*03*0.3 (MYLAR)	6-37-CM540-012-2	
11	TOUCH PAD SYMPHONICS TM-0146-003 C4800	6-49-C4802-010	
12	POWER SWITCH BOARD V3.0 W244EUQ	6-77-W24ES-003	
13	POWER BOARD SPONGE (S955-S9NY G4000) C4500	6-47-C4502-021	
14	SCREW M2.5*BL KI BK NY ICT (00-045.01+0.4)	6-35-B1120-3RE	
15	CLICK BOARD V1.0 W244EUQ	6-77-W24E2-001	
16	TOUCHPAD PLATE MODULE C4505	6-33-C4552-101	
17	TOP CASE FFC MYLAR (C) CHANGE LENGTH C4500	6-40-C4502-031	
18	SPONGE S955 (S9M25*75) FOR TOP CASE C4028	6-47-0019A-390	
19	CONDUCTIVE CLOTH (25*45*0.5) FOR TOP CASE C4028	6-47-C4122-011	
20	RUBBER (35*44*1.5) SILICON 70 SH M67050000	6-47-M67U1-040	
21	RUBBER FOR TOP CASE (11*61*5) C4505	6-47-C4552-030	
22	SCREW M2.5*BL KI BK NY ICT (00-045.01+0.4)	6-35-C1120-4RB	
23	TAPE MYLAR (C) (86*38.80MM) C4105	6-40-00150-861	
24	WASHER 06*03*0.3 (MYLAR)	6-37-02000-601	

Top (W244EUQ)

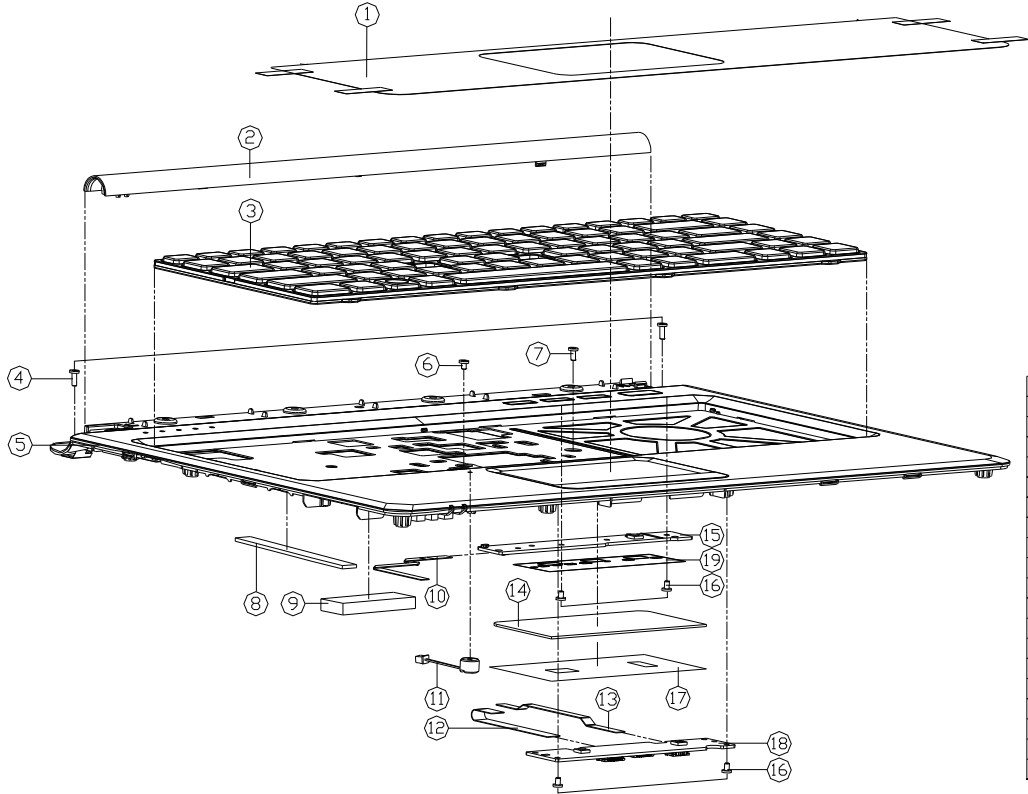
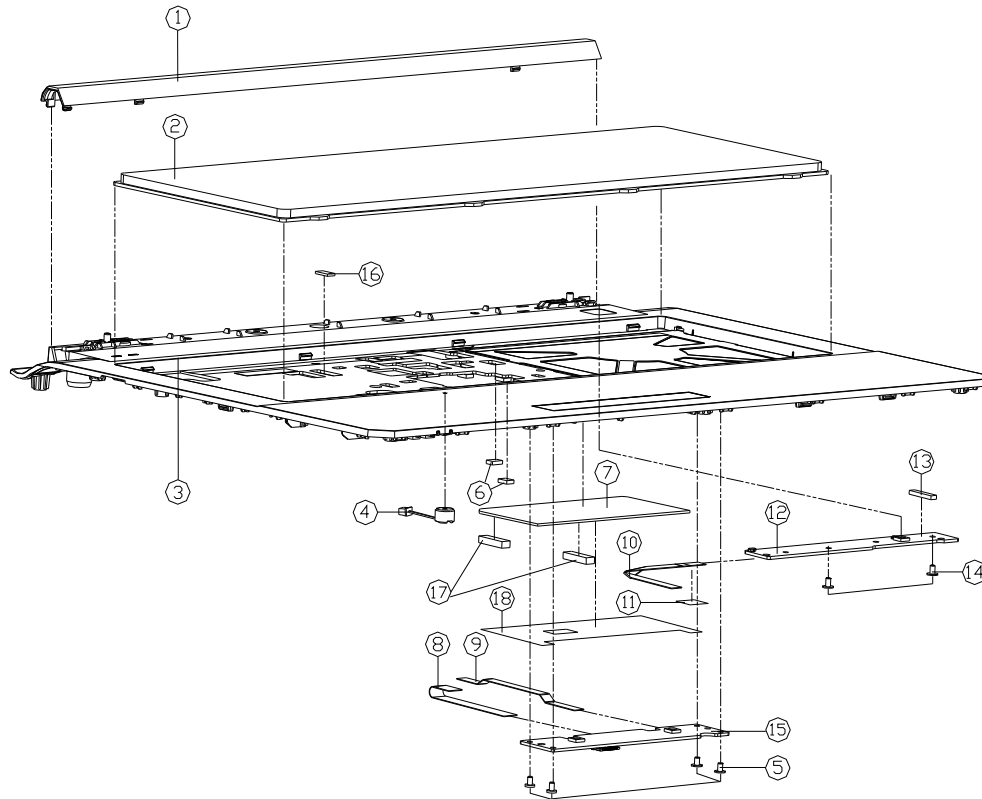


Figure A - 3
Top (W244EUQ)

ITEM	PART NAME	PART NO	REMARK
1	TOP CASE PROTECT MYLAR (8835) W244HUQ	6-40-W2448-031	
2	HINGE COVER (ABS+PC) W244HUQ	6-42-W2442-071	
3	K/B USA (BLACK) FRAME (US) MODULE W244EUQ	6-79-W244EUQK-010	
4	SCREW M2.5*0.8 K1 BK/Z NY ICT	6-35-B6125-BR0	
5	TOP CASE IMR MODULE W244HUQ	6-39-W2442-013	
6	SCREW M2.5*3.0 K1 BZ ICT NY	6-35-B6125-3R0	
7	SCREW M2.5*5.0 K1 BK/Z ICT NY	6-35-B6125-5RA	
8	SPRING FOR TOP CASE (574642) (SM5) SONY 64000	6-47-0019A-570	
9	FAN SPRING FOR TOP (35659750) (SM5) SONY 64000 ES200	6-47-0019A-353	
10	FFC CABLE FOR M/B TO POWER BOARD C4500	6-43-C4500-031	
11	FFC CABLE FOR TOUCH PAD 6PIN C4500	6-43-C4502-010	
12	FFC CABLE FOR M/B TO CLICK BOARD C4500	6-43-C4500-022	
13	TOUCH PAD SYNAPTICS TM-01146-003 C4800	6-49-C4802-010	
14	POWER SWITCH BOARD V3.0 W244EUQ	6-77-W24ES-D03	
15	SCREW M2*3.0 K1 NI ICT NY (00-045,01-04)	6-35-B1120-3RE	
16	TAPE MYLAR (C) (86*38.80) W244HUQ	6-40-W2442-040	
17	CLICK BOARD V1.0 W244EUQ	6-77-W24E2-D01	
18	POWER BOARD ALUMINUM FOIL W244HUQ	6-47-W2442-020	
19			

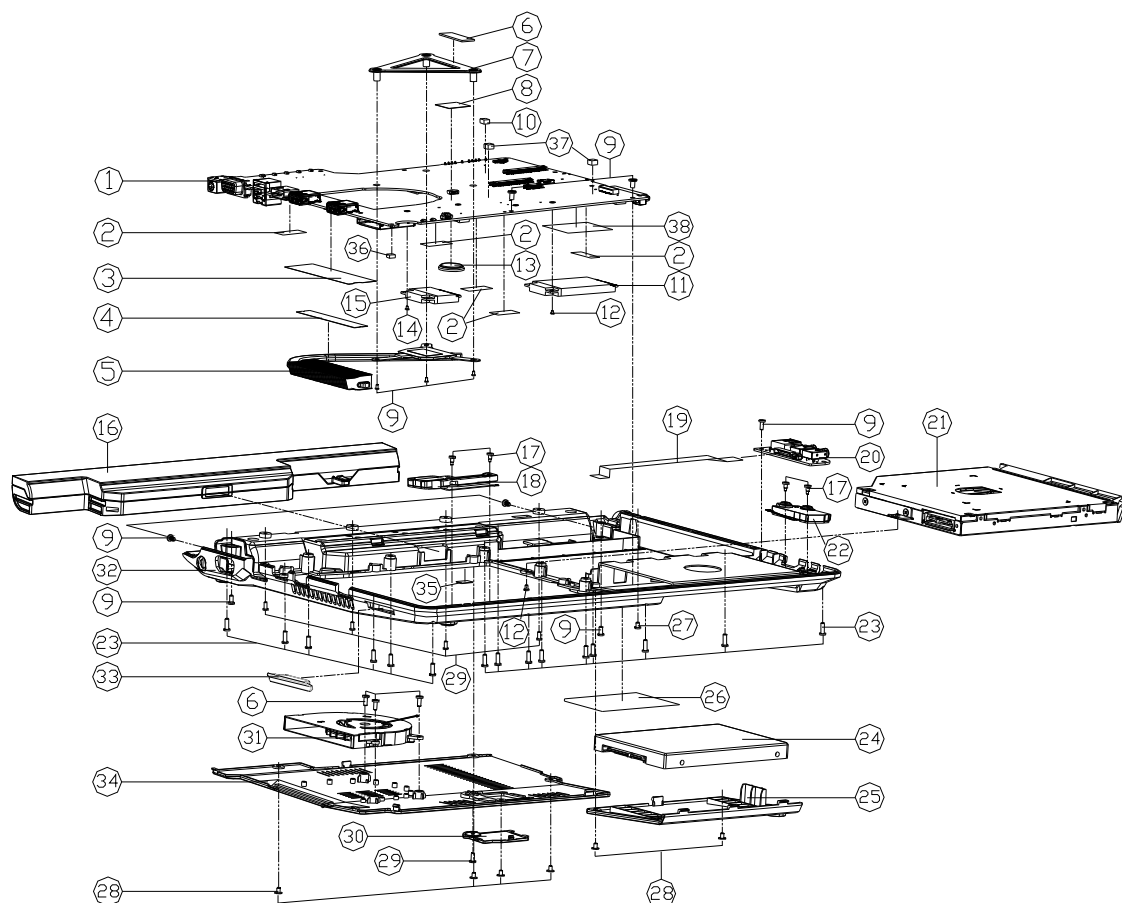
Part Lists

Top (W249EUQ)

Figure A - 4
Top (W249EUQ)

ITEM	PART NAME	PART NO	REMARK
1	TOP CASE HINGE COVER MODULE E4128	6-42-E4182-102	
2	K/B USA W/070303-430 W840黑色 WITH VISTA KEY	6-80-W8410-011-1	
3	TOP CASE MODULE E41290-C	6-39-E4192-011-C	
4	触控板 (Touch Pad) 11.6寸 1600x900 黑色 (11.6寸 1600x900 黑色)	6-23-EM54G-012-2	
5	触控板 (Touch Pad) 11.6寸 1600x900 黑色 (11.6寸 1600x900 黑色)	6-35-C1120-4RB	
6	RUBBER (5.5*4*1.5) SILICON 70度 M670SU黑色	6-47-M67U1-040	
7	TOUCH PAD SYNAPTICS TM-01146-003 C4800	6-49-C4802-010	
8	FFC CABLE FOR TOUCH PAD 6PIN C4500 (今略)	6-43-C4502-010-1	
9	FFC CABLE FOR W/B TO CLICK BOARD C4500 (今略)	6-43-C4500-022-1	
10	FFC CABLE FOR W/B TO POWER BOARD C4500 (今略)	6-43-C4500-031-1	
11	TOP CASE FFC MYLAR (PET+M 46) CHANGE LENGTH C4500	6-40-C4502-031	
12	POWER SWITCH BOARD V3.0 W255EU	6-77-W24ES-D03-A	
13	POWER BOARD SPONGE (SM5+SUNY C4000) C4500	6-47-C4502-021	
14	(非耐熱)SCREW M2*3L KI NI ICT GTY-PATCH	6-35-B1120-3RE	
15	CLICK BOARD V1.0 W244EUQ	6-77-W24E2-D01	
16	GADGET (11*6*5) W/B HEAT PIPE ON VIA TOP AREA W249	6-47-00190-10E	
17	RUBBER FOR TOP CASE (11*6*5) C4505	6-47-C4552-030	
18	TAPE MYLAR (C) (86*38.80MM) C4105	6-40-00150-861	

Bottom - SIM (W241EUQ, W245EUQ)

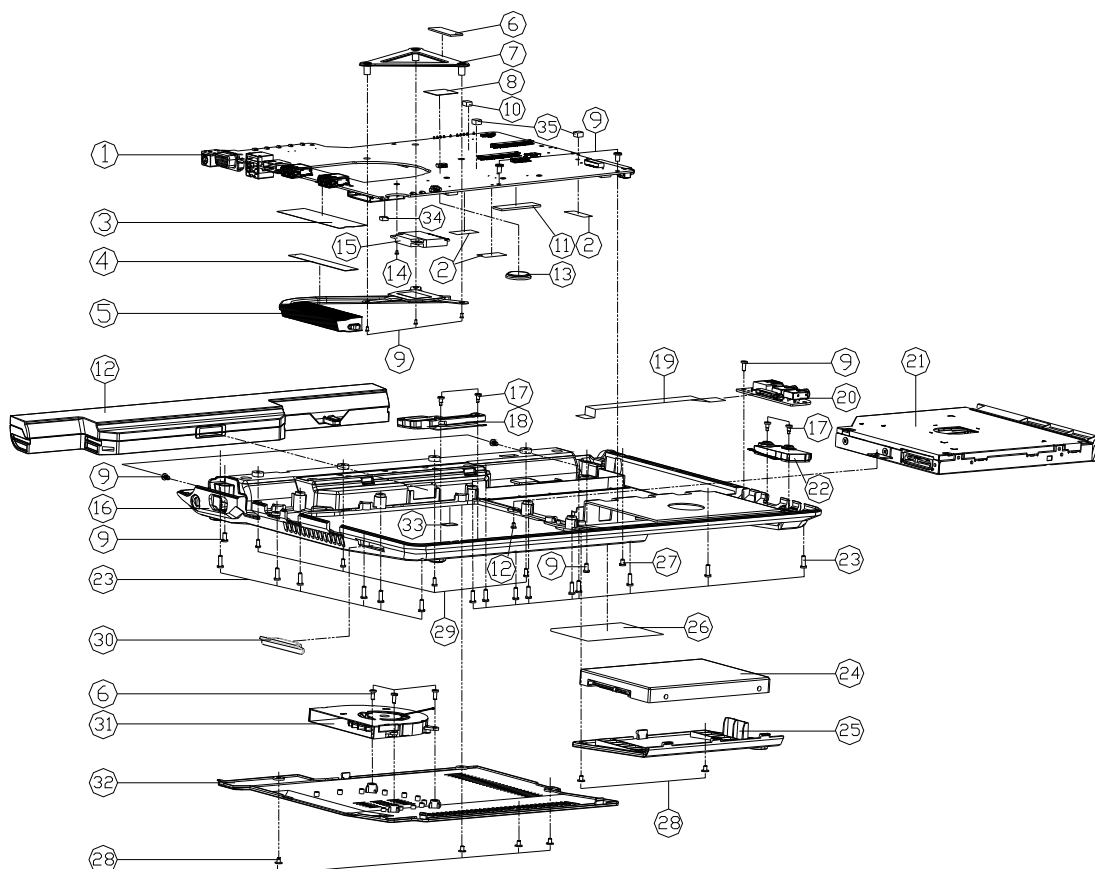


ITEM	PART NAME	PART NO	REMARK
1	MAIN BOARD V20 19/12/10 TPO W241EUQ-C	6-77-W21E0-D03	
1	MAIN BOARD V20 19/12/10 TPO W245EUQ-C	6-77-W21E0-DL3	
2	TAPE MYLAR TRANSPARENT CONDUCTIVE PATTERN	6-40-P1803-020	
3	MYLAR PET FOR M/D FIM CHANGE (L6600 W2400)	6-40-W240S-011	
4	AIRDUCT MYLAR DFR117 W240HJ	6-40-W244H-011	
5	CPU HEATSINK MODULE W240HJ	6-31-W244H-101	
6	M/D TOP RUBBER (SHIM) NO SILICONE (400)	6-47-E412S-010	
7	CPU SUPPORTER FOR HUAWEI RIVER SITE W240HJ	6-33-W150S-011	
8	MAIN BOARD M/D POWERED I/O KIT BZ CT NY	6-40-C450S-030	
9	SCREW M2.5X5L KT BK/Z ICT NY	6-35-B612S-58A	
10	GASLET (GASLET) FOR CPU COVER CASE-C	6-47-0019A-609	
11	W/O/H (OPTION) FOR CPU COVER CASE-C	6-88-W244H-2410	(OPTION)
12	SCREW NEXEL KT NI ICT NY (08-44.0J-H6)	6-35-B1120-3RE	
13	BATTERY 3V 220MA BBBCR2032B (KTS)	6-23-6A2B2-030	
14	SCREW NEXEL KT NI ICT NY (08-44.0J-H6)	6-35-B1120-3RD	
15	W/O/H (OPTION) FOR CPU COVER CASE-C	6-88-W345F-9400	(OPTION)
15	W/O/H (OPTION) FOR CPU COVER CASE-C	6-88-W254E-7000	(OPTION)
15	W/O/H (OPTION) FOR CPU COVER CASE-C	6-88-W345F-0700	(OPTION)
15	W/O/H (OPTION) FOR CPU COVER CASE-C	6-88-P177F-4200	(OPTION)
15	W/O/H (OPTION) FOR CPU COVER CASE-C	6-88-W110F-4200	(OPTION)
15	W/O/H (OPTION) FOR CPU COVER CASE-C	6-88-W254E-9400	(OPTION)
15	W/O/H (OPTION) FOR CPU COVER CASE-C	6-88-W110F-5300	(OPTION)
15	W/O/H (OPTION) FOR CPU COVER CASE-C	6-88-C505F-5300	(OPTION)
16	W/O/H (OPTION) FOR CPU COVER CASE-C	6-87-W24ES-4W4	(OPTION)
16	W/O/H (OPTION) FOR CPU COVER CASE-C	6-87-C480S-4G4B	(OPTION)
16	W/O/H (OPTION) FOR CPU COVER CASE-C	6-87-E412S-4D7A	(OPTION)
17	SCREW NEXEL KT NI ICT NY FOR SPEAKER	6-35-Z1120-6A2	
17	W/O/H (OPTION) FOR CPU COVER CASE-C	6-23-SC480-022	
19	W/O/H (OPTION) FOR CPU COVER CASE-C	6-43-W2400-011-C	
20	AUDIO I/O BOARD V4.0 W244EUQ	6-77-W24E0-D04	
21	SATA DVD SUPER MULTI ASSY (OPTION)	6-79-W24E000-00-C	
21	SATA DVD SUPER MULTI ASSY (OPTION)	6-79-W24E000-00-C	
21	SATA DVD SUPER MULTI ASSY (OPTION)	6-79-W24E000-00-C	
21	SATA BLU-RAY COMBO ASSY (OPTION)	6-79-W24E000-00-C	
21	W/O/H (OPTION) FOR CPU COVER CASE-C	6-79-W24E000-00-C	
22	W/O/H (OPTION) FOR CPU COVER CASE-C	6-23-SC480-013	
23	SCREW M2.5X5L KT BK/Z NY ICT	6-35-B612S-58A	
24	W/O/H (OPTION) FOR CPU COVER CASE-C	6-79-C48000J-010	FOR W241EUQ
24	W/O/H (OPTION) FOR CPU COVER CASE-C	6-79-C51200J-010	FOR W245EUQ
24	W/O/H (OPTION) FOR CPU COVER CASE-C	6-79-C51200J-020	FOR W241EUQ/ELQ
25	HDD COVER MODULE C4500	6-42-C450J-102	
25	HDD COVER MODULE C4500-C	6-42-C450J-100-C	
26	PRODUCT LABEL FOR W244EUQ-C	6-45-W244EUQ-001-C	
26	PRODUCT LABEL FOR W245EUQ-C	6-45-W245EUQ-001-C	
26	PRODUCT LABEL FOR W245EUQ-C	6-45-W245EUQ-001-C	
27	SCREW NEXEL KT BK/Z ICT NY (08-10.0J)	6-35-B6120-2RC	
28	SCREW M2.5X4L KT BK/Z ICT NY	6-35-B412S-4RA	
29	SCREW M2.5X4L KT BK/Z ICT NY	6-35-B6120-4RA	
30	SIM COVER MODULE FOR E410P-C	6-42-E412S-100-C	
31	FLAN. MODULE W251HUB	6-31-W25H5-100	
32	W/O/H (OPTION) FOR CPU COVER CASE-C	6-39-C4503-023-C	
33	W/O/H (OPTION) FOR CPU COVER CASE-C	6-47-C450B-011	
34	CPU COVER MODULE FOR CPU-C CASE (HUAWEI RIVER)	6-42-E4123-103-C	
35	MYLAR (15*6*0.6T) FOR M77X	6-40-M7703-010	
36	GASLET (GASLET) FOR TV CASE TOP CASE (M77X)	6-47-00190-102	
37	TOP M/D RUBBER C (6414500 SILICONE M7700)	6-47-M7705-081	
38	MYLAR ADV3040IT (FR3) - 3M-467 M751	6-40-M7351-020	

Figure A - 5
Bottom - SIM
(W241EUQ,
W245EUQ)

A.Part Lists

Figure A - 6
Bottom - No SIM
(W241EUQ,
W245EUQ)



ITEM	PART	NAME	PART NO	QTY	REMARK
1	MAIN BOARD V10	MAIN BOARD V10	6-77-W210-003-1		
2	MAIN BOARD V10	MAIN BOARD V10	6-77-W210-003-1		
3	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
4	WAVE MTR FOR WTS	CHORDS (LONG) 4000	6-40-W2405-011		
5	ALUMINUM MYLAR DIFR	W240H1	6-40-W24H1-011		
6	CPU HEATSINK	MIDDLE	W240H1	6-31-W24H1-000	
7	CPU HEATSINK	FOR THE SILICON	6-47-E425-010		
8	100 SUPPORT FOR WAVE MTR	CHORDS	6-23-E450-003		
9	AUDIO BOARD	FOR WAVE MTR (C) 100	6-40-C4505-030		
10	SCREW M2x5xSL	KT BRZ NCT NY	6-35-B6125-SRA		
11	GASSET (GASSET) FOR CPU COVER	E425C	6-47-0019A-609		
11	SPRING (SPRING) CHORDS-0100	C400	6-40-W100-610		
12	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		(OPTION)
13	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		(OPTION)
14	SCREW M2x5xSL	KT BRZ NCT NY	6-35-B6125-SRA		
15	ALUMINUM MYLAR DIFR	W240H1	6-40-W24H1-011		(OPTION)
16	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		(OPTION)
17	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		(OPTION)
18	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		(OPTION)
19	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		(OPTION)
20	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		(OPTION)
21	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		(OPTION)
22	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		(OPTION)
23	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		(OPTION)
24	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		(OPTION)
25	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		(OPTION)
26	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		(OPTION)
27	SCREW M2x5xSL	KT BRZ NCT NY	6-35-B6125-SRA		
28	ALUMINUM MYLAR DIFR	W240H1	6-40-W24H1-011		
29	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
30	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
31	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
32	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
33	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
34	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
35	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
36	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
37	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
38	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
39	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
40	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
41	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
42	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
43	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
44	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
45	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
46	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
47	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
48	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
49	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
50	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
51	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
52	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
53	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
54	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
55	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
56	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
57	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
58	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
59	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
60	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
61	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		
62	WAVE MTR TRANSDUCER	CHORDS-0100	6-40-PIB03-020		

Bottom - 3G (W244EUQ)

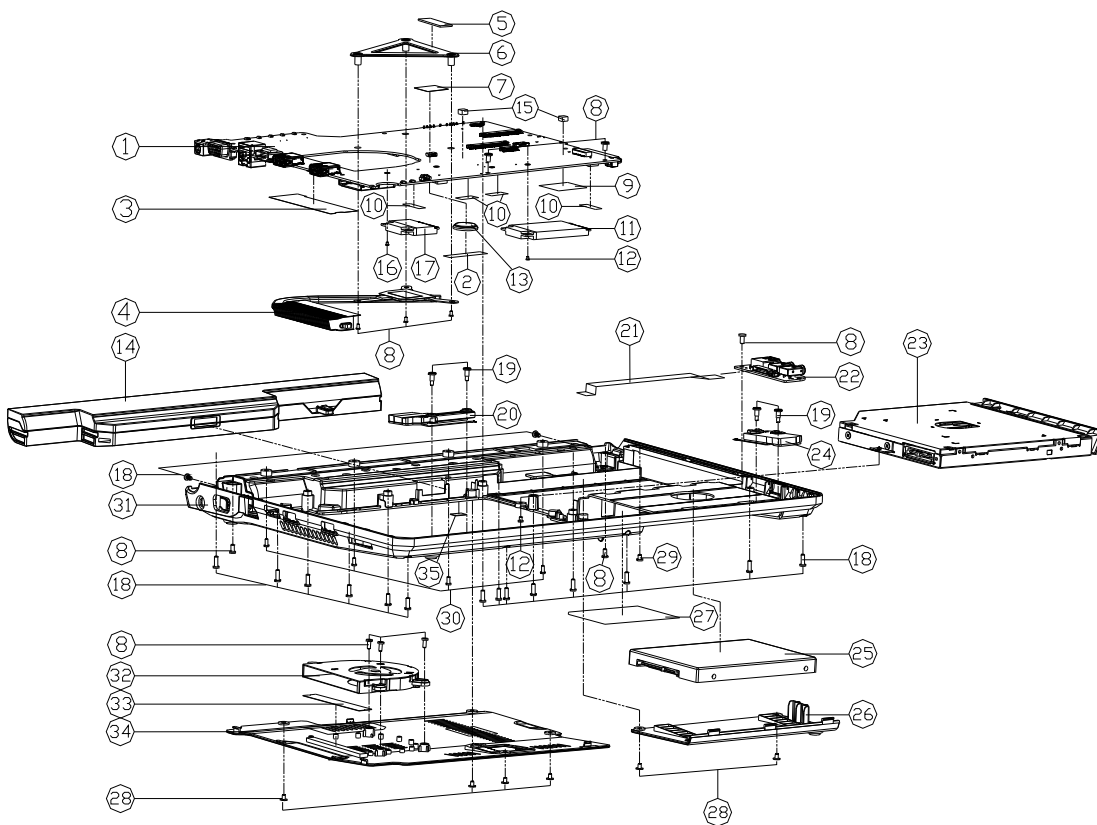
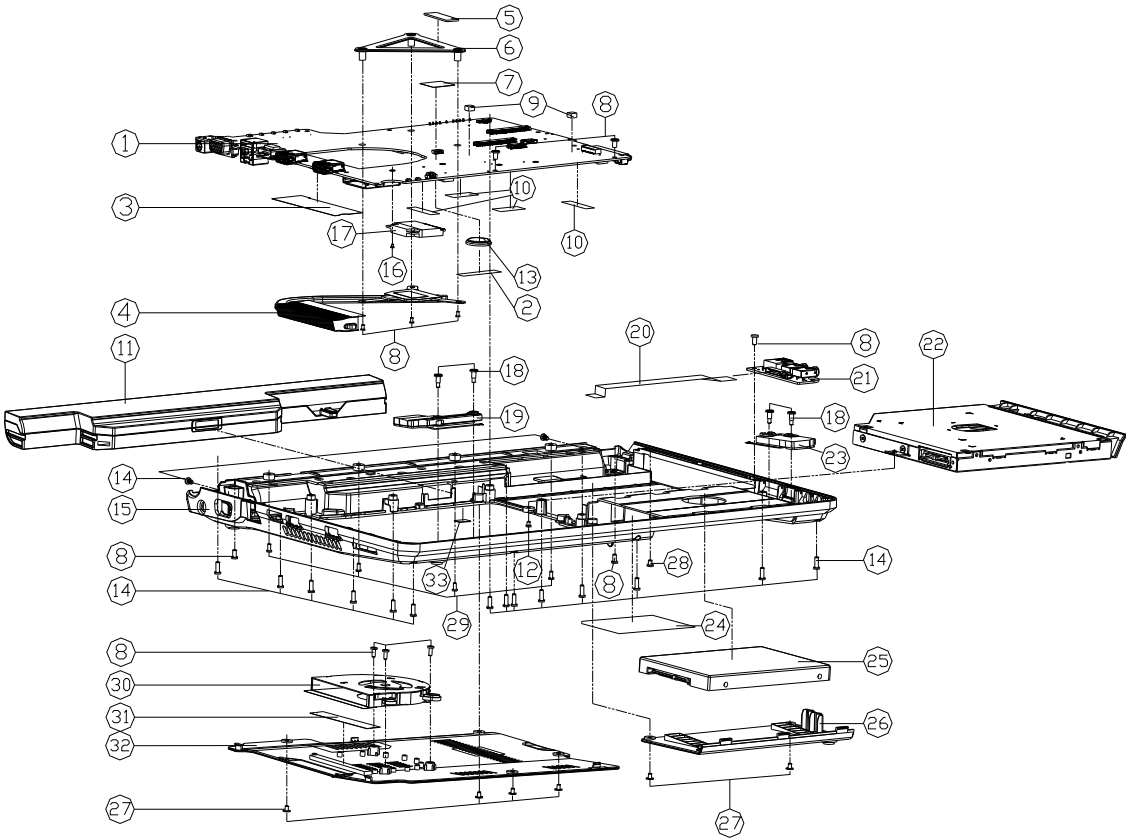
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Figure A - 7
Bottom - 3G
(W244EUQ)

Part Lists

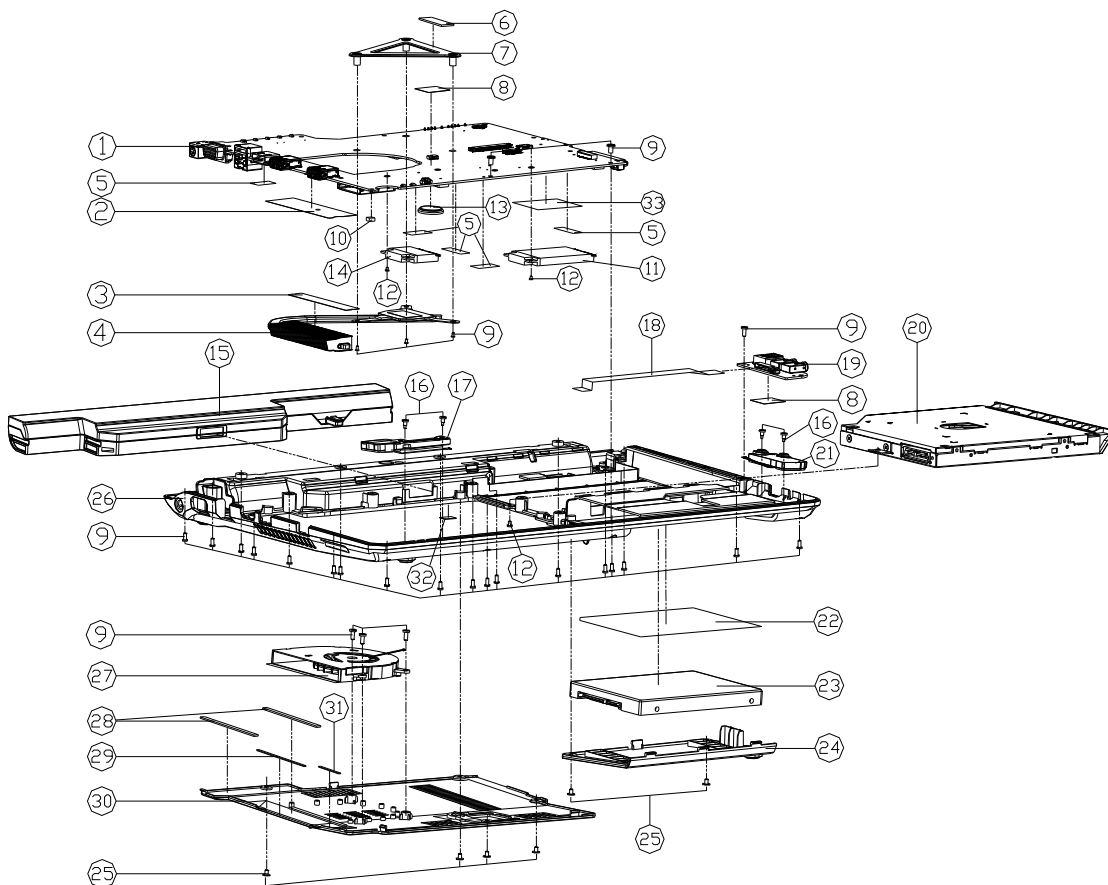
Bottom - No 3G (W244EUQ)

Figure A - 8
Bottom - No 3G
(W244EUQ)



ITEM	PART NAME	PART NO	REMARK
1	MAIN BOARD V30 (W/D 364X/D TPU V04H00	6-77-W24E0-B03-1	
2	TAPE MYLAR (AS)MYLAR M550J	6-40-W24E0-BL3-4	
3	MYLAR PET TOP N/A (IN CHANGE LENOVO V04H00	6-40-W24H0-011	
4	CPU HEATSINK MODULE W240H4	6-31-W24HN-101	
5	W/D TOP RUBBER COATING W/D SILICONE E420	6-47-E412S-010	
6	CPU SUPPORTER TOP HUBIN RIVER SECC V25H0M	6-33-W150S-011	
7	AUDIO BOARD MYLAR (P/N) PET/CH 401 C00M	6-40-C450S-030	
8	SCREW M2.5XSL KI BK/Z ICT NY	6-35-B612S-SRA	
9	TOUCH PAD RUBBER SILICONE (57X45X5) V04H	6-47-W2442-010	
10	TAPE MYLAR TRANSPARENT (20X40X0.5) P00M	6-40-P1803-020	
11	BATTERY 3V 220MA BBBCR2032B (KTS)	6-87-W24ES-4W4	COPT(DN)
12	SCREW M2.5XSL KI BK/Z NY	6-35-B612S-4G4B	COPT(DN)
13	SCREW M2.5XSL KI BK/Z NY	6-35-B612S-4D7A	COPT(DN)
14	SCREW M2.5XSL KI BK/Z NY	6-35-B1120-3RE	
15	SCREW M2.5XSL KI BK/Z NY	6-35-B612S-8R0	
16	SCREW M2.5XSL KI BK/Z NY	6-35-B612S-412	
17	SCREW M2.5XSL KI BK/Z NY	6-35-B1120-3RD	
18	SCREW M2.5XSL KI BK/Z NY	6-88-W345F-9400	
19	SCREW M2.5XSL KI BK/Z NY	6-88-W25H2-7000	
20	SCREW M2.5XSL KI BK/Z NY	6-88-W25H2-9400	
21	SCREW M2.5XSL KI BK/Z NY	6-88-W345F-8700	
22	SCREW M2.5XSL KI BK/Z NY	6-88-W1102-9400	
23	SCREW M2.5XSL KI BK/Z NY	6-88-C555F-7001	
24	SCREW M2.5XSL KI BK/Z NY	6-88-C555F-5300	
25	SCREW M2.5XSL KI BK/Z NY	6-88-P107F-4200	
26	SCREW M2.5XSL KI BK/Z NY	6-88-P107F-4200	
27	SCREW M2.5XSL KI BK/Z NY	6-88-P107F-4210	
28	SCREW M2.5XSL KI BK/Z NY	6-35-Z1120-6R2	
29	SCREW M2.5XSL KI BK/Z NY	6-23-SC480-023	
30	SCREW M2.5XSL KI BK/Z NY	6-43-W2400-011-1	
31	SCREW M2.5XSL KI BK/Z NY	6-77-W24E0-B04	
32	SCREW M2.5XSL KI BK/Z NY	6-79-W244EUQ-000	
33	SCREW M2.5XSL KI BK/Z NY	6-79-W244H02-000	
34	SCREW M2.5XSL KI BK/Z NY	6-23-SC480-013	
35	SCREW M2.5XSL KI BK/Z NY	6-45-W244EUQ-011	
36	SCREW M2.5XSL KI BK/Z NY	6-45-W244EUQ-010	
37	SCREW M2.5XSL KI BK/Z NY	6-79-C48000J-010	
38	SCREW M2.5XSL KI BK/Z NY	6-79-E51200J-020	
39	SCREW M2.5XSL KI BK/Z NY	6-42-W244J-101	
40	SCREW M2.5XSL KI BK/Z NY	6-35-B412S-4RA	
41	SCREW M2.5XSL KI BK/Z NY	6-35-B6120-2RC	
42	SCREW M2.5XSL KI BK/Z NY	6-35-B6120-SR0	
43	SCREW M2.5XSL KI BK/Z NY	6-31-W25H5-100	
44	SCREW M2.5XSL KI BK/Z NY	6-40-W24H0-011	
45	SCREW M2.5XSL KI BK/Z NY	6-42-W2443-201	
46	SCREW M2.5XSL KI BK/Z NY	6-40-W7703-010	

Bottom (W249EUQ)

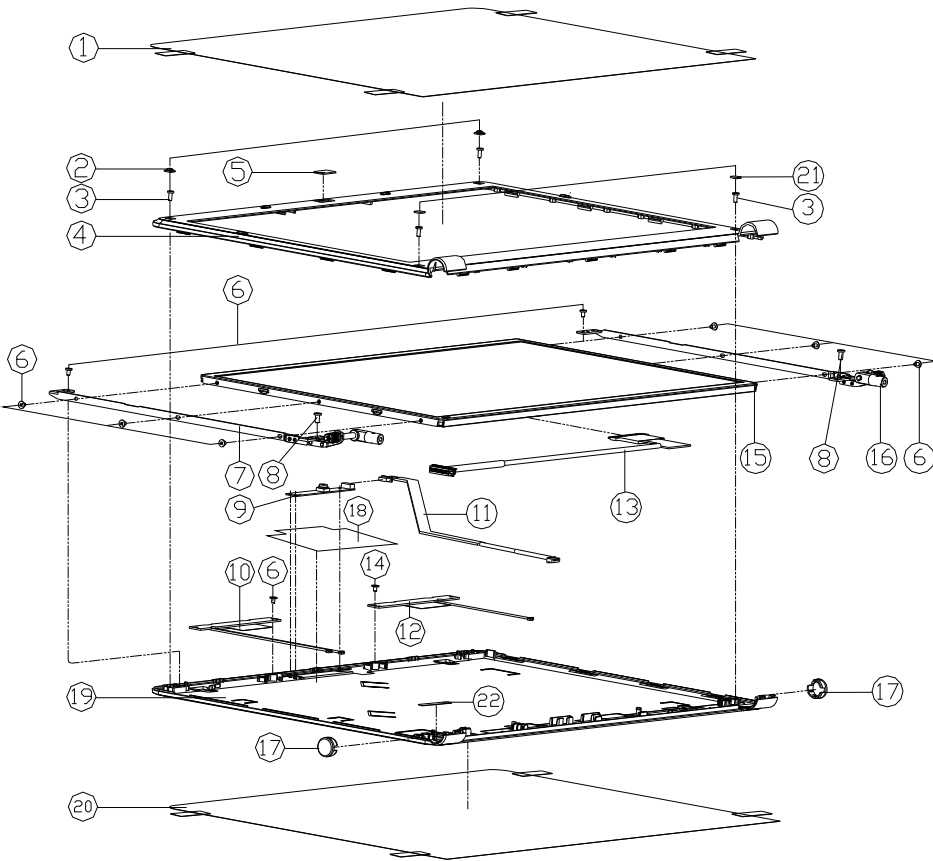
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**Figure A - 9
Bottom
(W249EUQ)**

Part Lists

LCD (W241EUQ)

Figure A - 10
LCD (W241EUQ)



ITEM	PART NAME	PART NO	REMARK
1	LED FRONT COVER PROTECTION MYLAR PET-08050 C600	6-40-C4501-011	
2	LED FRONT COVER SCREW RUBBER SLICIN C4500	6-47-C4501-031	
3	SCREW M2xSL K11-08 B-40 BK/Z ICT NY	6-35-B6120-5R0	
4	LCD FRONT COVER MODULE C4500	6-39-C4501-012	
5	CCD BEBE PMMA M810L	6-42-M8101-011	
5	W/D CCD LENS PMMA 0.5T C4800	6-42-C4801-010	
6	SCREW M2xSL KI NI ICT NY (00-#40.01-08)	6-35-B1120-3R0	
7	LCD HINGE-L SECC C4500	6-33-C4501-011	
8	SCREW M2.5xSL KI BK/Z ICT NY	6-35-B6125-5RA	
9	INC CAMERA BEZEL FOR 08050502 201 1.3M 6A W240H	6-88-E510C-4904	OPTION
9	INC CAMERA BEZEL FOR 08050502 201 1.3M 6A W240H	6-88-M115C-4901	OPTION
9	INC CAMERA BEZEL FOR 08050502 201 1.3M 6A W240H	6-88-M111C-5100	OPTION
10	ANTENNA WCDMA PCB 3G 860MM HIRE C4120	6-23-7C450-032-1	
11	WIRE CABLE FOR CCD SP 3105MM C4500	6-43-C4501-011	
12	ANTENNA WCDMA PCB 3G 860MM HIRE C4120	6-23-7E412-010	
13	WIRE CABLE FOR LIVE 299MM 0L/10 (00-#45.01-04)	6-43-E5101-011-A	
14	SCREW M2xSL KI NI ICT NY (00-#45.01-04)	6-35-B1120-3RE	
15	LED HAP HD 002 1114W10-50 GLARE TYPE LCD 5.0M	6-50-J8152-H02	
15	LED HAP HD 002 1114W10-50 GLARE TYPE LCD 5.0M	6-50-J8152-L09	
16	LCD HINGE-R SECC C4500	6-33-C4501-021	
17	HINGE COSMETIC RING ABS PA727 C4501	6-42-C4518-011	
18	CCD AL FOIL (AL FOIL MYLAR-011) W240H	6-47-W241H-010	
19	LCD BACK COVER MODULE (MR C4800-C	6-39-C4511-021-C	
20	BACK COVER PROTECTION MYLAR PET-08050 C600	6-40-C4511-010	
21	FRONT COVER PC FOR SCREW C4500	6-40-C4501-071	
22	TAPE MYLAR (B) MYLAR M550J	6-40-M55J2-020	

LCD (W245EUQ)

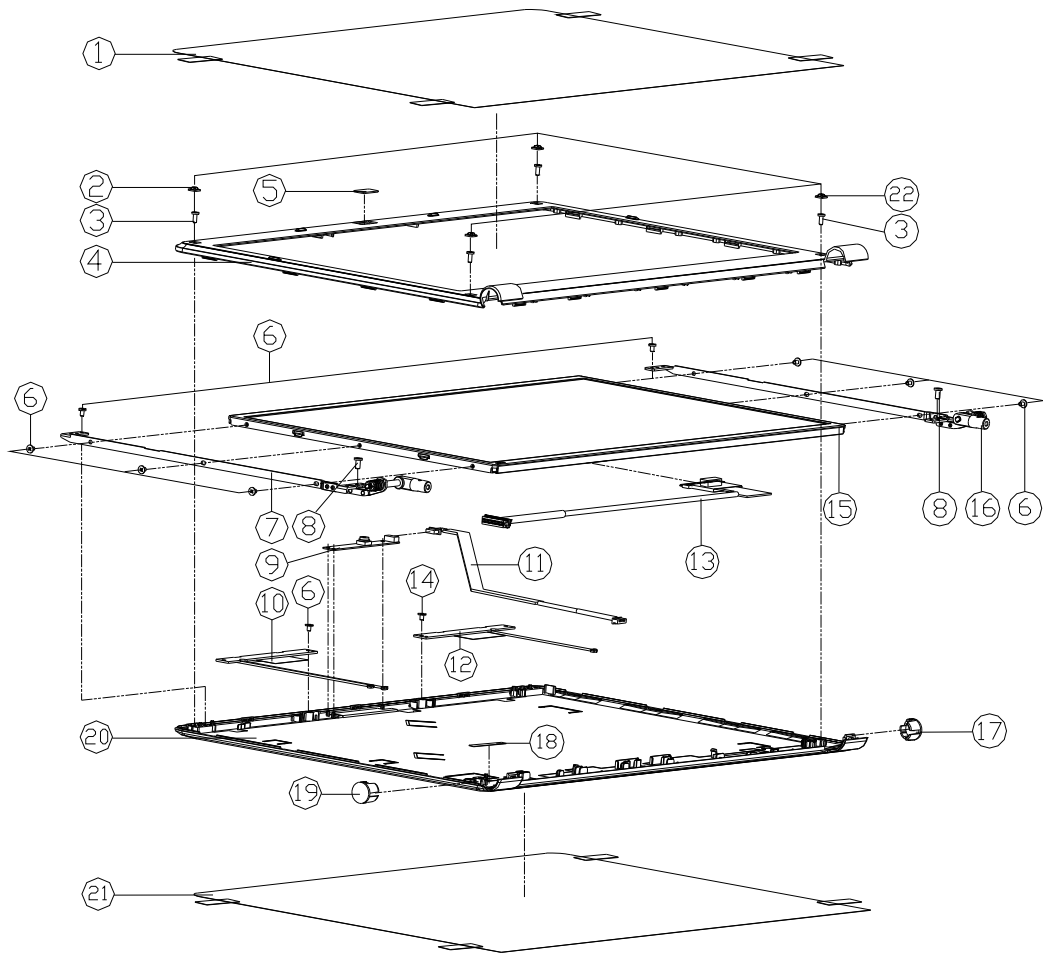


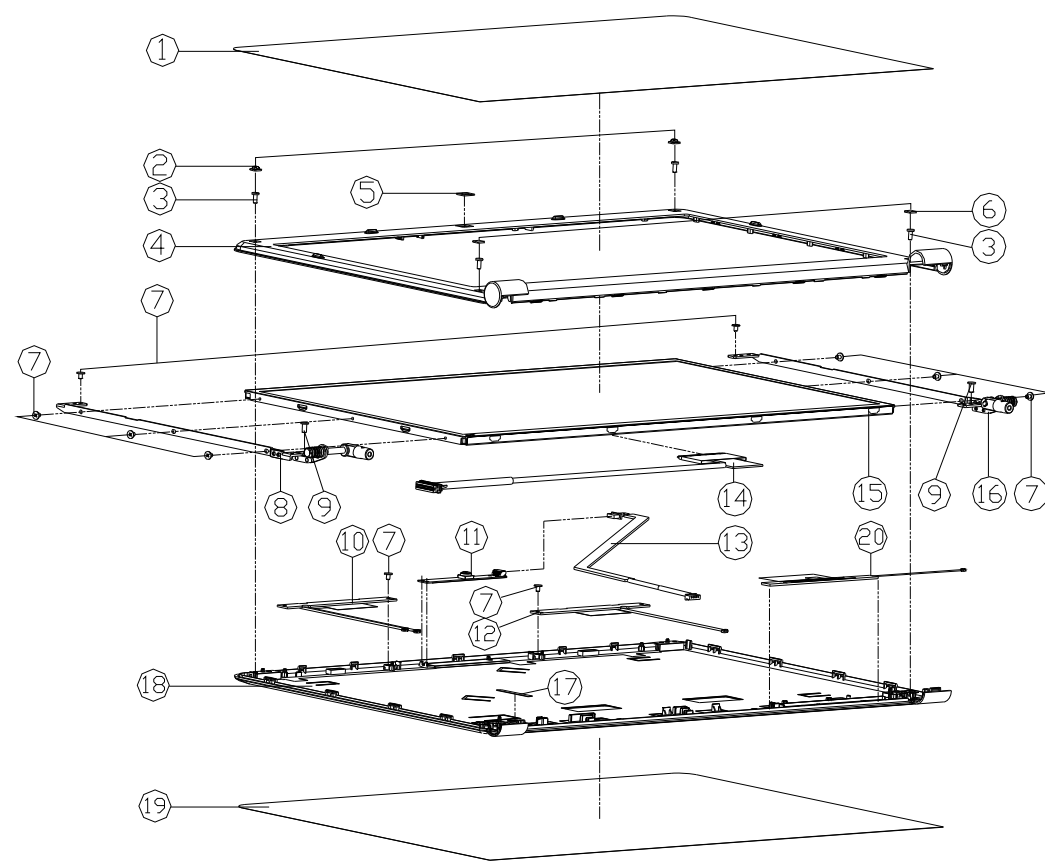
Figure A - 11
LCD (W245EUQ)

ITEM	PART NAME	PART NO	REMARK
1	LCD FRONT COVER PROTECTION MYLAR (PET-3895) C4500	6-40-C4501-011	
2	LCD FRONT COVER SCREW RUBBER SILICON C4500	6-47-C4501-031	
3	SCREW M2*5L K1CT-0.8 D=4.0 BK/Z ICT NY	6-35-B6120-5R0	
4	LCD FRONT COVER MODULE C4500	6-39-C4501-012	
5	CCD 鋁板 PMMA M810L	6-42-M810I-011	
6	W/D CCD LENS PMMA 0.5T C4800	6-42-C480T-010	
7	SCREW M2*3L K1 NI ICT NY (DD=44.0,DT=0.8)	6-35-B1120-3R0	
8	LCD HINGE-L SECC C4500	6-33-C4501-011	
9	SCREW M2.5*5L K1 BK/Z ICT NY-	6-35-B6125-5R0	
10	UV-CAMERA HOSON FIX (B280X353-320 1.3M 6M W245EUQ)	6-88-E510C-4904	OPTION
11	UV-CAMERA HOSON FIX (B280X353-320 1.3M 6M W245EUQ)	6-88-M115C-4901	OPTION
12	UV-CAMERA HOSON FIX (B280X353-320 1.3M 6M W245EUQ)	6-88-M111C-5100	OPTION
13	ANTENNA WCDMA PCB 3G 860MM 100MM E4120	6-23-7C450-032-1	
14	WIRE CABLE FOR CCD SP 3105MM C4500	6-43-C450T-011	
15	ANTENNA WCDMA PCB 3G 860MM 100MM E4120	6-23-7E412-010	
16	WIRE CABLE FOR LVDS 295MM 0.4V D C4500	6-43-E5101-011-A	
17	SCREW M2*3L K1 NI ICT NY (DD=44.5,DT=0.4)	6-35-B1120-3RE	
18	LCD TAP HD BOX HT40X10-50T GLARE TYPE (LED 52MM)	6-50-J8152-H02	
19	LCD TAP HD LG LPT40X10-50T GLARE TYPE (LED 52MM)	6-50-J8152-L09	
20	LCD HINGE-R SECC C4500	6-33-C4501-021	
21	HINGE COSMETIC RING R (CM6140) C4505	6-42-C4558-011	
22	TAPE MYLAR (B)MYLAR M550J	6-40-M55J2-020	
23	HINGE COSMETIC RING L (CM6140) C4505	6-42-C4558-021	
24	LCD BACK COVER (MR MODULE (CHANGE) C4505-C	6-39-C4551-022-C	
25	BACK COVER PROTECTION MYLAR(B285-3895) C4500	6-40-C4501-020	
26	FRONT COVER PC FOR SCREW C4500	6-40-C4501-071	

A.Part Lists

LCD (W244EUQ)

Figure A - 12
LCD (W244EUQ)



ITEM	PART NAME	PART NO	REMARK
1	LCD FRONT COVER PROTECTION MYLAR (PCT-30675) C4500	6-40-C4501-011	
2	LCD FRONT COVER SCREW RUBBER SLICED C4500	6-47-C4501-031	
3	SCREW M2.5xL KKT+0.8 D=4.0 BK/Z ICT NY	6-35-B6120-5R0	
4	LCD FRONT COVER MODULE W244HJ0	6-39-W2441-012	
5	W/D CCD LENS PMMA E51200	6-42-E5101-040	
6	CCD LENS PMMA E51200	6-42-E5101-031	
7	FRONT COVER PC FOR SCREW C4500	6-40-C4501-071	
8	SCREW M2.5xL KI NI ICT NY (C00-045,01-04)	6-35-B1120-3RE	
9	LCD HINGE L SECC W244HJ0	6-33-W2441-020	
10	SCREW M2.5xL KI BK/Z ICT NY-	6-35-B6125-5RA	
11	OPTIONAL CAMERA FOR W244HJ0 (CAMERA MODULE) W244HJ0	6-23-W244-020	
12	OPTIONAL CAMERA FOR W244HJ0 (CAMERA MODULE) W244HJ0	6-88-W25UC-5100	OPTION
13	OPTIONAL CAMERA FOR W244HJ0 (CAMERA MODULE) W244HJ0	6-88-W25UC-4900	OPTION
14	OPTIONAL CAMERA FOR W244HJ0 (CAMERA MODULE) W244HJ0	6-88-M11IC-5100	OPTION
15	OPTIONAL CAMERA FOR W244HJ0 (CAMERA MODULE) W244HJ0	6-88-E510C-4904	OPTION
16	OPTIONAL CAMERA FOR W244HJ0 (CAMERA MODULE) W244HJ0	6-23-7E412-010	
17	WIRE CABLE FOR LCD SP 310.5MM W244HJ0 (L)	6-43-W24ET-010	
18	WIRE CABLE FOR LCD SP 310.5MM W244HJ0 (R)	6-43-W24ET-010	
19	LCD BACK COVER (IMR MODULE) W244HJ0	6-39-W2441-021	
20	BACK COVER PROTECTION MYLAR (PCT-30675) C4500	6-40-C4501-020	

LCD (W249EUQ)

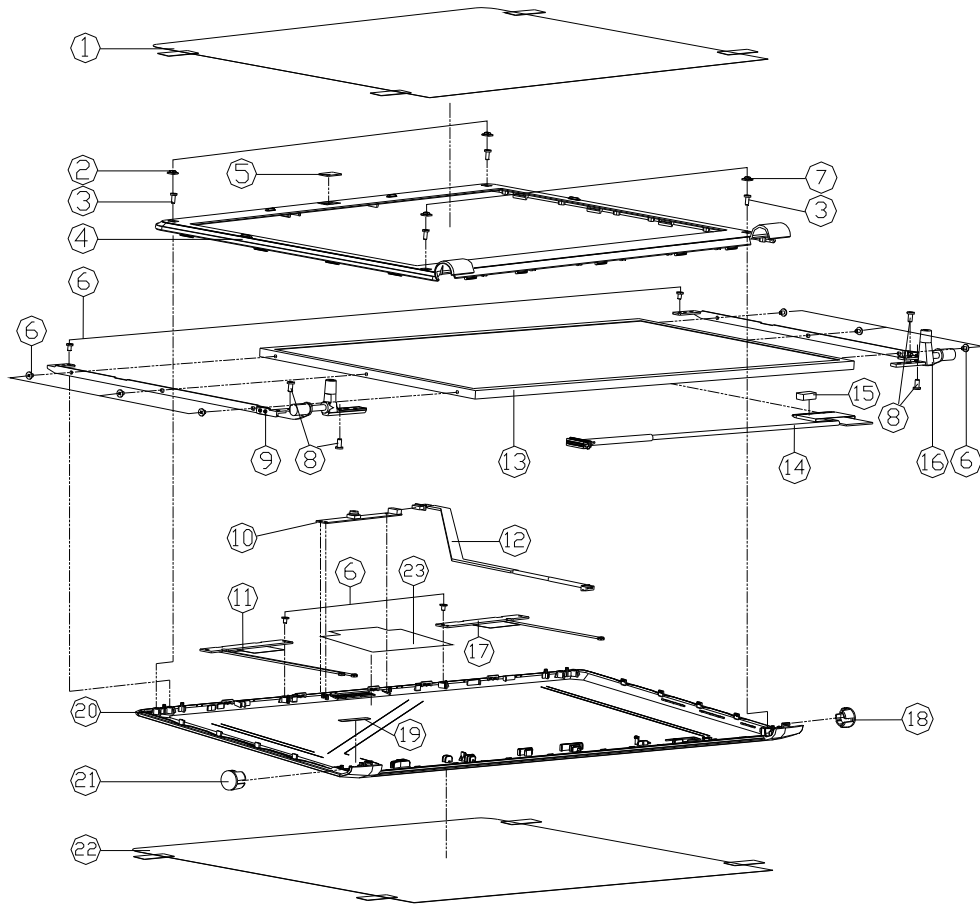
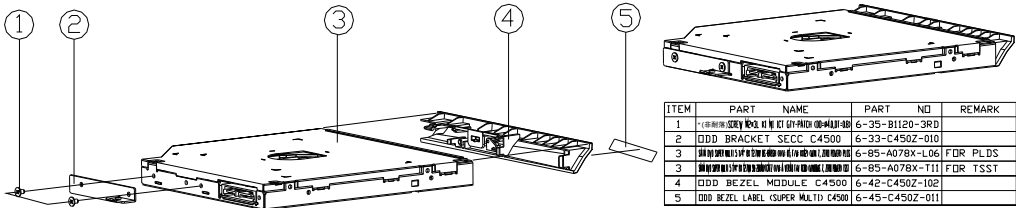


Figure A - 13
LCD (W249EUQ)

ITEM	PART NAME	PART NO	REMARK
1	LCD FRONT COVER PROTECTION MYLAR PET-300H5D C4500	6-40-C4501-011	
2	LCD FRONT COVER SCREW RUBBER SILICON C4500	6-47-C4501-031	
3	SCREW M2x5L K1 KT NY (D0=4.0, D1=4.0) BK/Z ICT NY	6-35-B6120-5R0	
4	LCD FRONT COVER MODULE C4500	6-39-C4501-012	
5	CCD BEAR PMMA M810L	6-42-M8101-011	
5	W/O CCD LENS PMMA 0.5T C4800	6-42-C4801-010	
6	SCREW M2x3L K1 NI ICT NY (D0=4.0, D1=4.0)	6-35-B1120-3RD	
7	FRONT COVER PC FOR SCREW C4500	6-40-C4501-071	
8	SCREW M2.5x5L K1 BK/Z ICT NY-	6-35-B6125-5RA	
9	LCD HINGE L SECC E41280	6-33-E4181-021	
10	UVC CAMERA BEZEL FIX (D0=30.0, D1=30.0) L3M 6AA W249HUG	6-88-E510C-4904	OPTION
10	UVC CAMERA BEZEL FIX (D0=30.0, D1=30.0) L3M 6AA W249HUG	6-88-M115C-4901	OPTION
10	UVC CAMERA CHUCKY FIX (D0=30.0, D1=30.0) L3M 6AA W249HUG	6-88-M111C-5100	OPTION
10	UVC CAMERA BEZEL FIX (D0=30.0, D1=30.0) L3M 6AA W249HUG	6-88-E510C-4900	OPTION
10	UVC CAMERA CHUCKY FIX (D0=30.0, D1=30.0) L3M 6AA W249HUG	6-88-W150C-5100	OPTION
11	WIRE CABLE FOR CCD SP 310.5MM C4500	6-23-7C450-032-1	
12	WIRE CABLE FOR CCD SP 310.5MM C4500	6-43-C4501-011	
13	LCD HINGE NO BEE HITTING-501 GLARE TYPE LED 50MM	6-50-J8152-H02	FOR W249EUQ
13	LCD HINGE NO LG LPH04H-FLAI GLARE TYPE LED 50MM	6-50-J8152-L09	FOR W249EUQ
13	LCD HINGE NO DUNEI M800-L02 GLARE TYPE LED 50MM	6-50-J8152-D00	FOR W249HUG
13	LCD HINGE NO HVO M800H02-010 GLARE TYPE LED 50MM	6-50-J8152-B01	FOR W249HUG
13	LCD HINGE NO LG LPH04H-FLAI GLARE TYPE LED 50MM	6-50-J8152-L03	FOR W249HUG
14	WIRE CABLE FOR LVIS 29MM (D0=29.0, D1=29.0) C4500	6-43-E5101-011-A	
15	GASKET (D0=40.0) FOR TV COIL TOP CASE M510TU	6-47-00190-102	ONLY FOR W249HUG
16	LCD HINGE R SECC E41280	6-33-E4181-011	
17	MYLAR 3L 100 3L 100 (D0=30.0, D1=30.0) L3M 6AA W249HUG	6-23-7E412-010	
18	HINGE COSMETIC RING R (CM6140) C4505	6-42-C4558-011	
19	TAPE MYLAR (CB) MYLAR M550J	6-40-M55J2-020	
20	LCD BACK COVER (MR) MODULE E41290-C	6-39-E4191-022-C	
21	HINGE COSMETIC RING L (CM6140) C4505	6-42-C4558-021	
22	BACK COVER PROTECTION MYLAR (D0=30.0, D1=30.0) C4500	6-40-C4501-020	
23	CCD AL FOIL (AL FOIL MYLAR-011) W249HUG	6-47-W24H1-010	

SATA-DVD (W241EUQ, W245EUQ)

Figure A - 14
SATA-DVD
(W241EUQ,
W245EUQ)



SATA-DVD (W244EUQ)

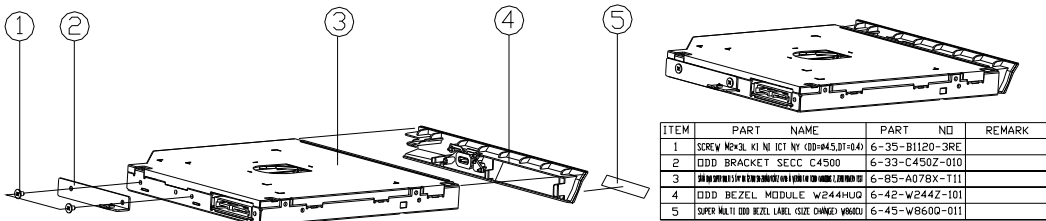
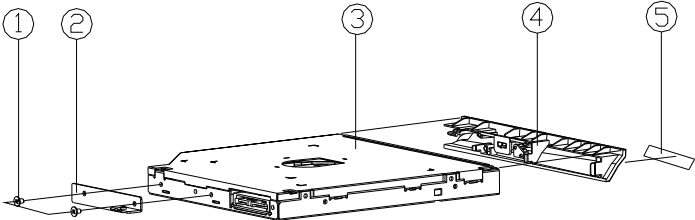


Figure A - 15
SATA-DVD
(W244EUQ)

SATA-DVD (W249EUQ)

Figure A - 16
SATA-DVD
(W249EUQ)



ITEM	PART	NAME	PART	NO	REMARK
1	BEZEL LABEL (SUPER MULTI) C4500		6-35-B1120-3RD		
2	ODD BRACKET SECC C4500		6-33-C450Z-010		
3	BEZEL MODULE (FOR PANASONIC) E4128		6-85-A078X-P12		FOR PANASONIC
3	BEZEL MODULE (FOR TSST) E4128		6-85-A078X-T11		FOR TSST
4	ODD BEZEL MODULE E4128		6-42-E418Z-101		
5	ODD BEZEL LABEL (SUPER MULTI) C4500		6-45-C450Z-011		

Combo (W244EUQ)

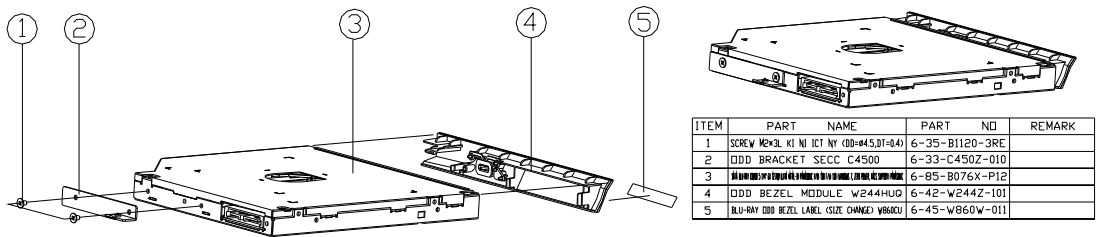


Figure A - 17
Combo
(W244EUQ)

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the **W241EUQ/W244EUQ/W245EUQ/W249EUQ** notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

Diagram - Page	Diagram - Page	Diagram - Page
System Block Diagram - Page B - 2	PantherPoint - M 6/9 - Page B - 19	Power 0.85VS - Page B - 36
Ivy Bridge Processor 1/7 - Page B - 3	PantherPoint - M 7/9 - Page B - 20	Power V-Core1 - Page B - 37
Ivy Bridge Processor 2/7 - Page B - 4	PantherPoint - M 8/9 - Page B - 21	Power V-Core2 - Page B - 38
Ivy Bridge Processor 3/7 - Page B - 5	PantherPoint - M 9/9 - Page B - 22	Charger, AC In - Page B - 39
Ivy Bridge Processor 4/7 - Page B - 6	USB 3.0, Power, WLAN - Page B - 23	Click Board - Page B - 40
Ivy Bridge Processor 5/7 - Page B - 7	CCD, 3G, TPM - Page B - 24	Audio Board/USB - Page B - 41
Ivy Bridge Processor 6/7 - Page B - 8	Card Reader, LAN RTL8411 - Page B - 25	Power Switch & LID Board - Page B - 42
Ivy Bridge Processor 7/7 - Page B - 9	LAN (RTL8411), SATA HDD, ODD - Page B - 26	External ODD Board - Page B - 43
DDR3 SO-DIMM_0 - Page B - 10	USB 3.0 TI TUSB7320 - Page B - 27	Power Sequence - Page B - 44
DDR3 SO-DIMM_1 - Page B - 11	KBC-ITE IT8518 - Page B - 28	
LVDS, Inverter - Page B - 12	LED, MDC - Page B - 29	
HDMI, CRT - Page B - 13	Audio Codec ALC269 - Page B - 30	
PantherPoint - M 1/9 - Page B - 14	USB Charger, Fan, TP, Multi-Conn - Page B - 31	
PantherPoint - M 2/9 - Page B - 15	System Power - Page B - 32	
PantherPoint - M 3/9 - Page B - 16	VDD3, VDD5 - Page B - 33	
PantherPoint - M 4/9 - Page B - 17	Power 1.5V/0.75V/1.8VS - Page B - 34	
PantherPoint - M 5/9 - Page B - 18	Power 1.05VS - Page B - 35	

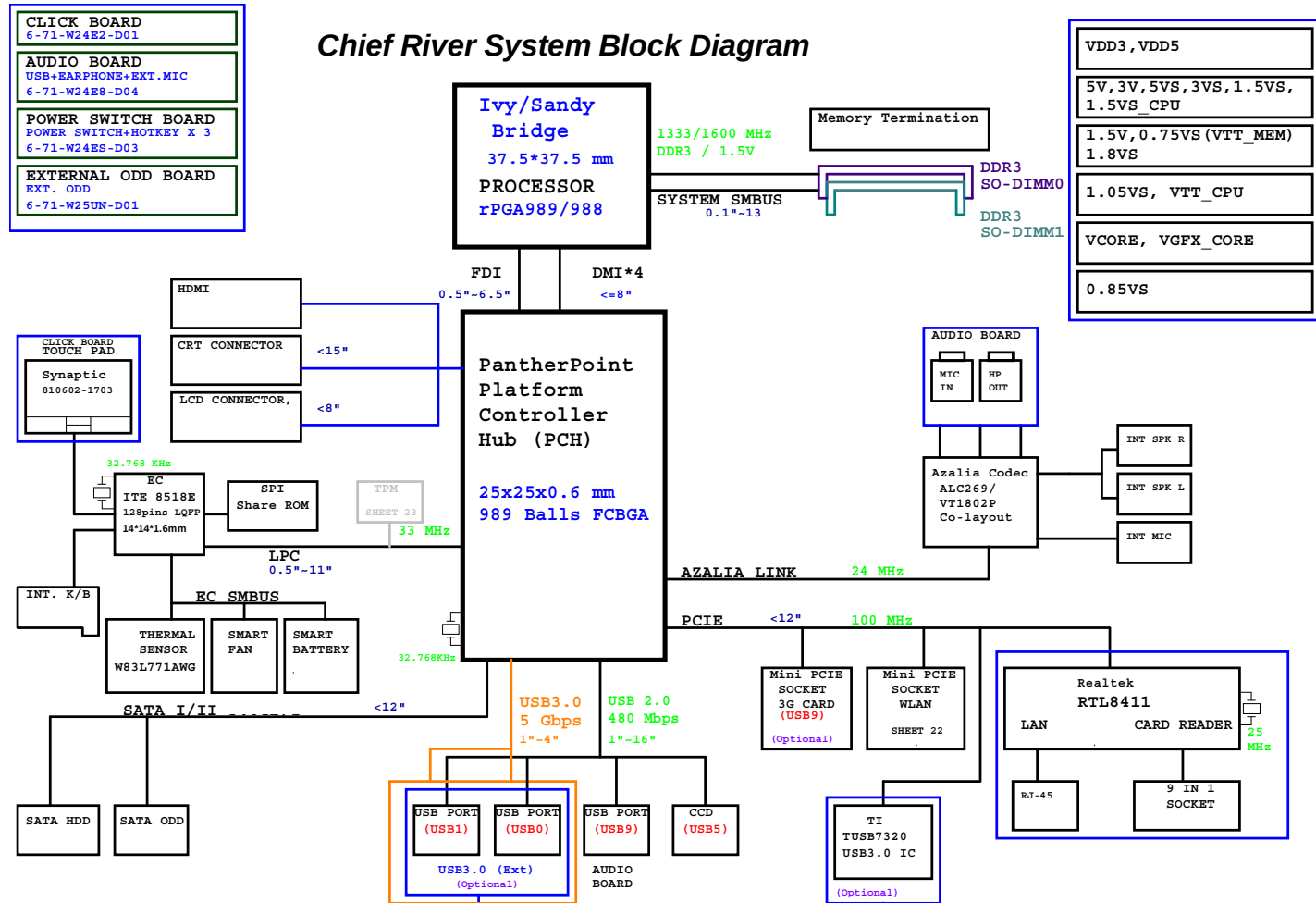
Table B - 1
**Schematic
Diagrams**



Version Note

The schematic diagrams in this chapter are based upon version 6-7P-W24E5-003. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

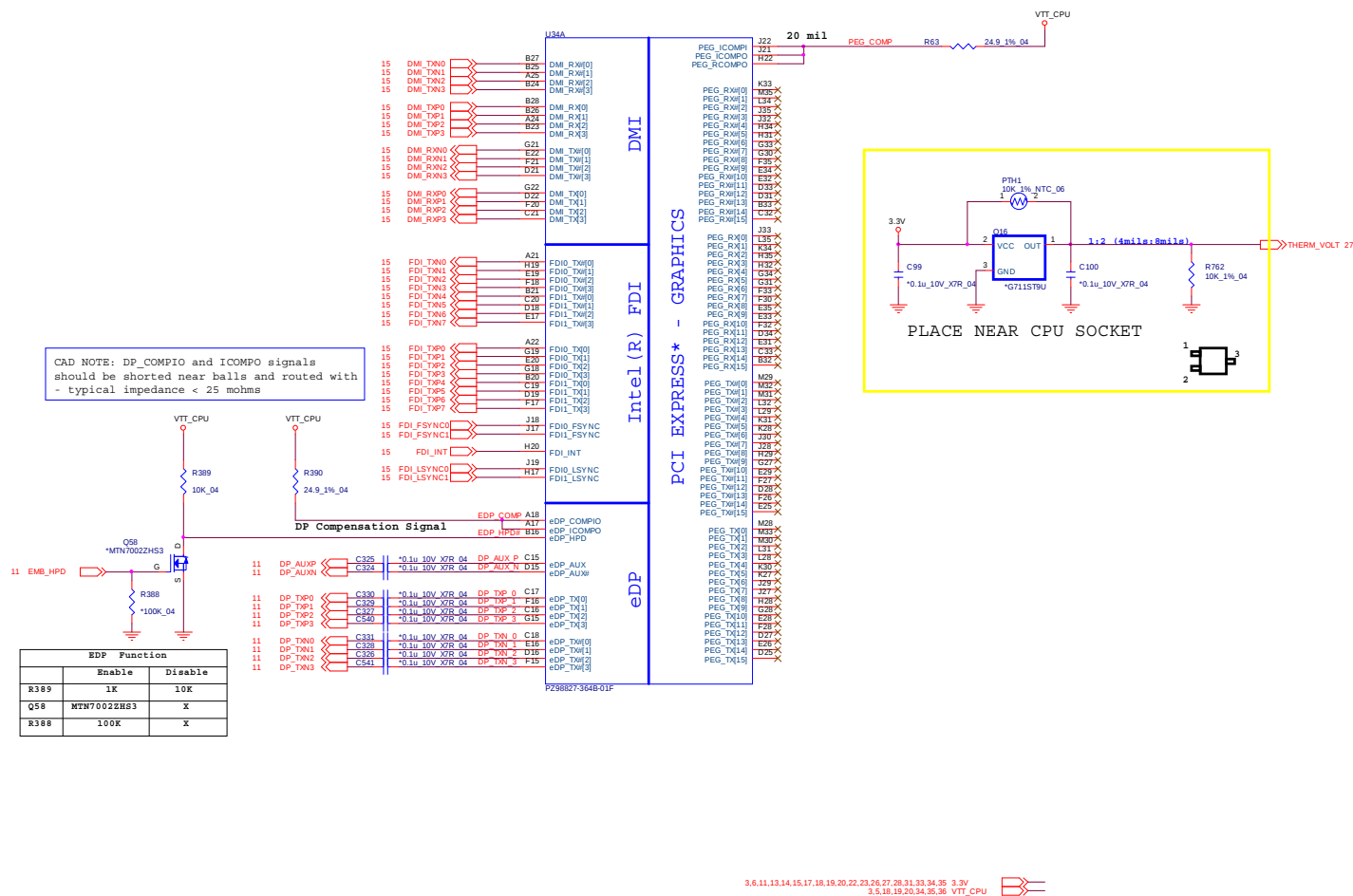
System Block Diagram



Sheet 1 of 43
System Block
Diagram

Ivy Bridge Processor 1/7

Ivy/Sandy Bridge Processor 1/7 (DMI,PEG,FDI)

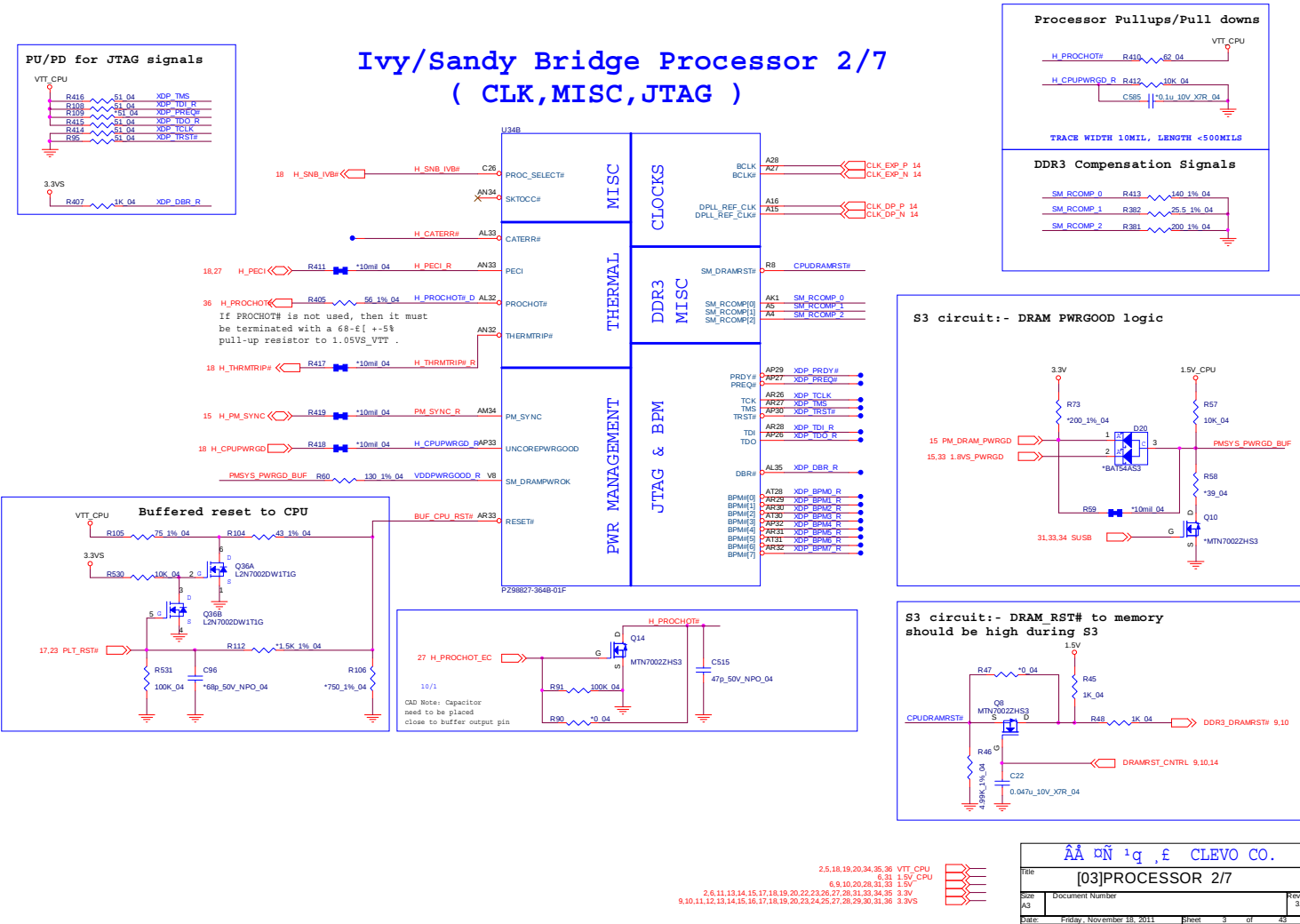


Sheet 2 of 43
Ivy Bridge
Processor 1/7

Schematic Diagrams

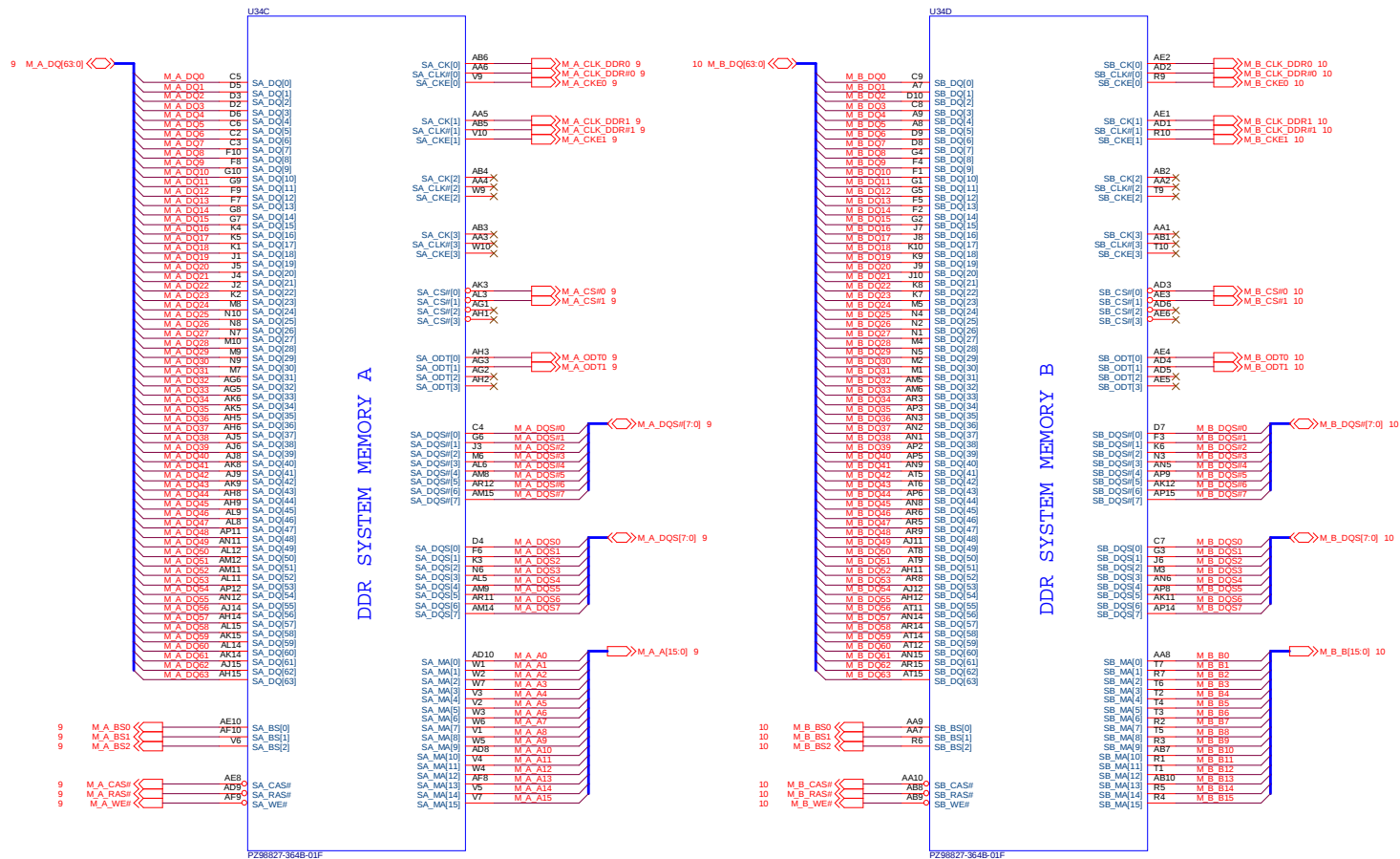
Ivy Bridge Processor 2/7

Sheet 3 of 43
Ivy Bridge
Processor 2/7



Ivy Bridge Processor 3/7

Ivy/Sandy Bridge Processor 3/7 (DDR3)



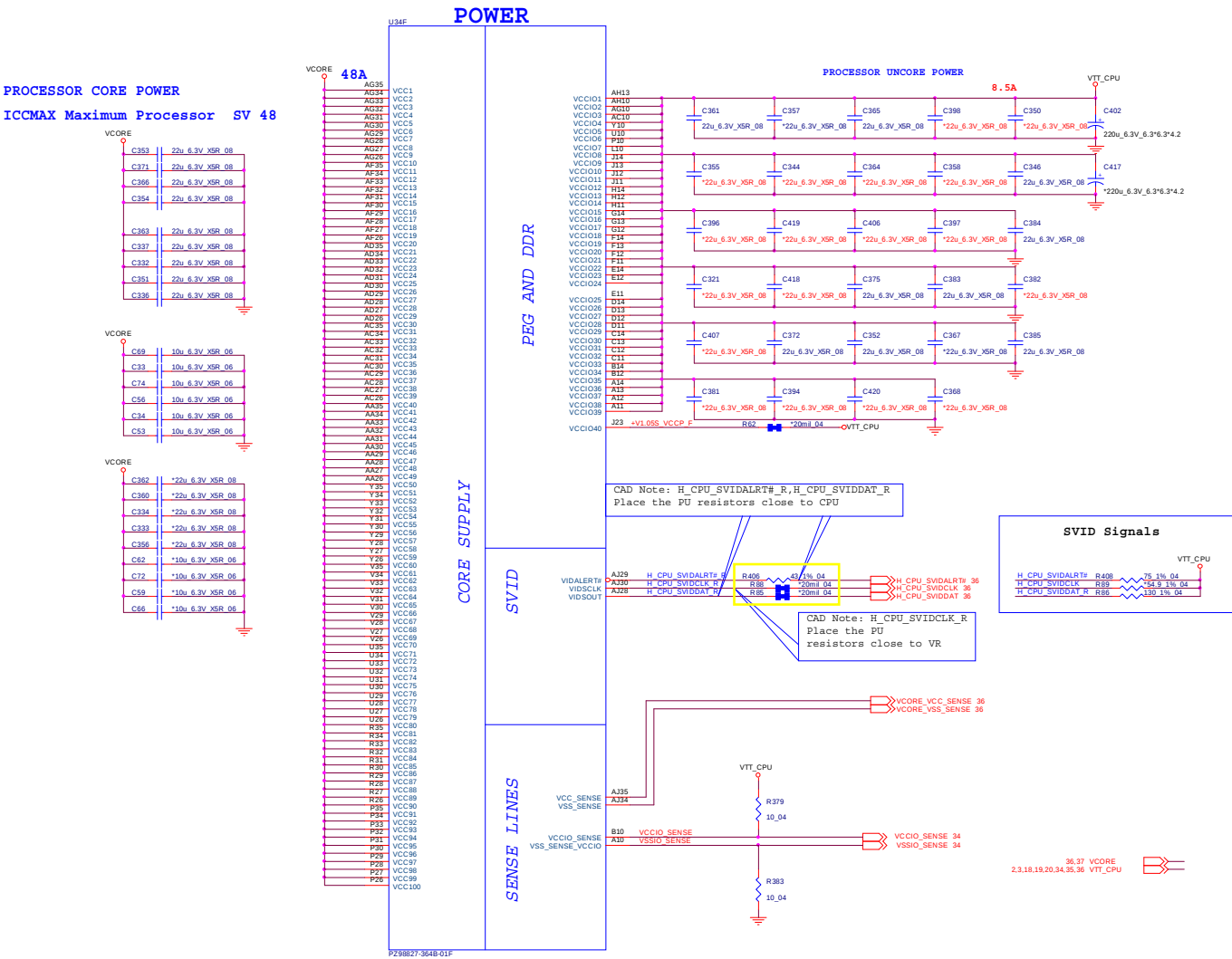
Sheet 4 of 43
Ivy Bridge
Processor 3/7

Schematic Diagrams

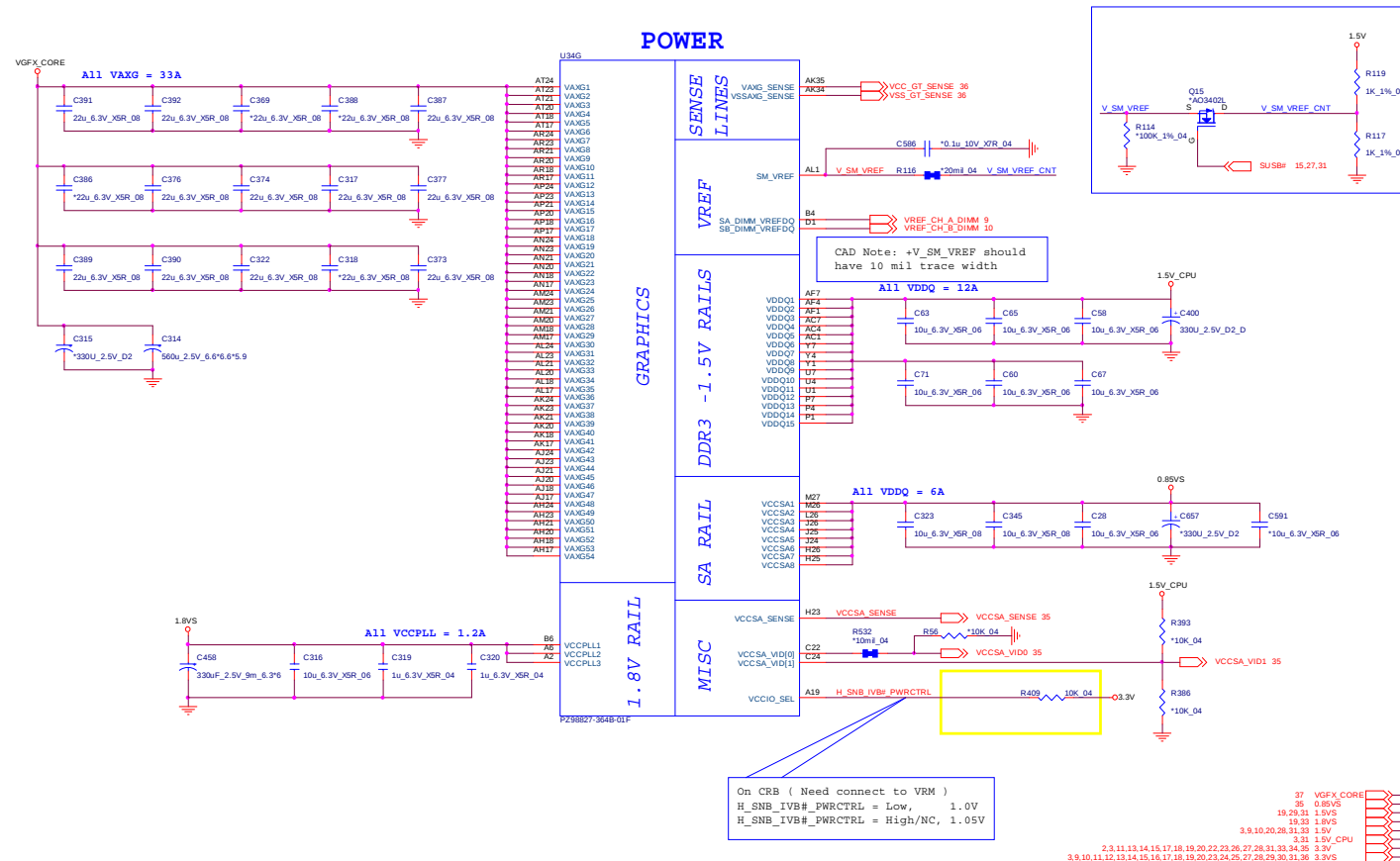
Ivy Bridge Processor 4/7

Ivy/Sandy Bridge Processor 4/7

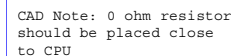
Sheet 5 of 43
Ivy Bridge
Processor 4/7



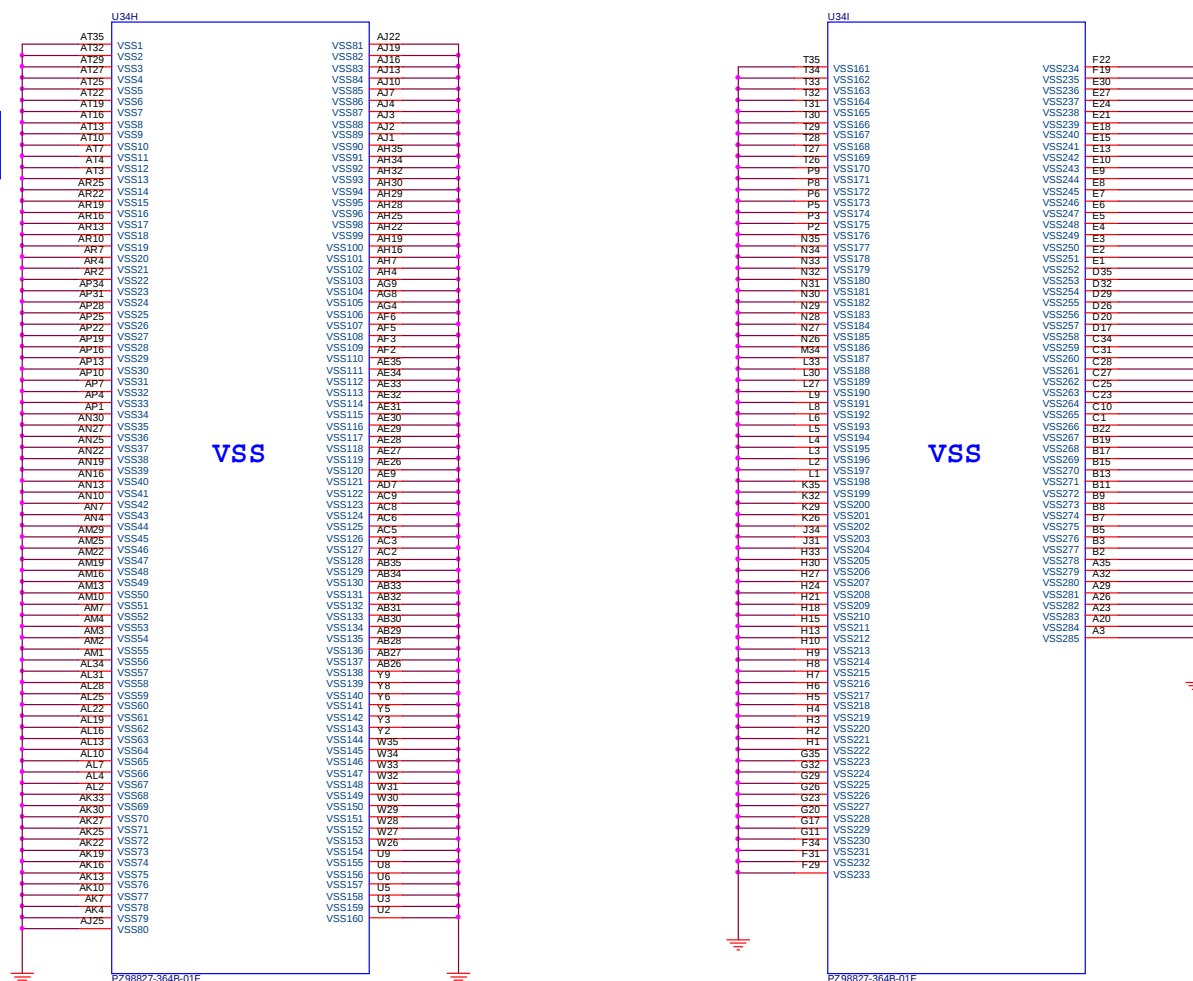
Ivy/Sandy Bridge Processor 5/7 (GRAPHICS POWER)



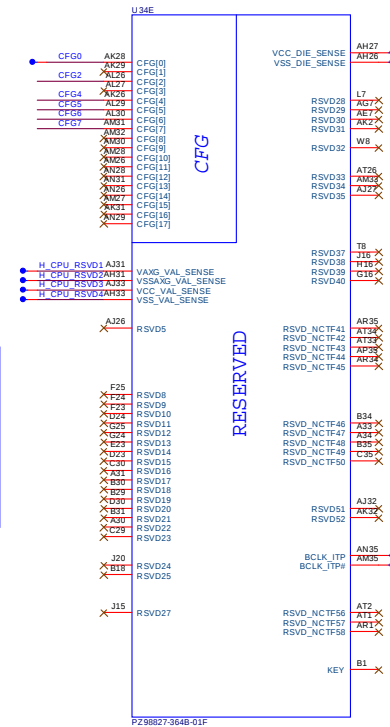
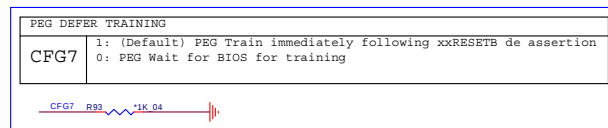
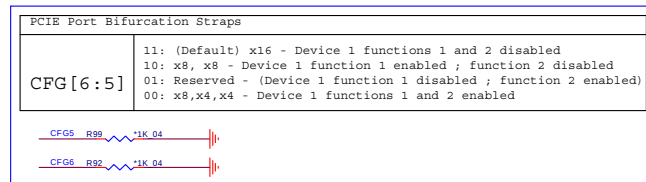
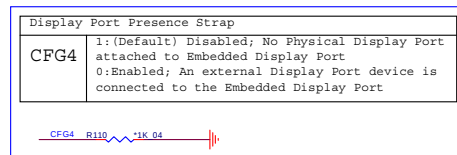
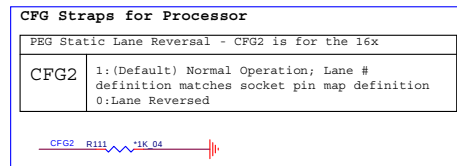
B - 8 Ivy Bridge Processor 6/7



Sheet 7 of 43
Ivy Bridge
Processor 6/7



Ivy Bridge Processor 7/7

Ivy/Sandy Bridge Processor 7/7
(RESERVED)

3,6,9,10,20,28,31,33 1.5V

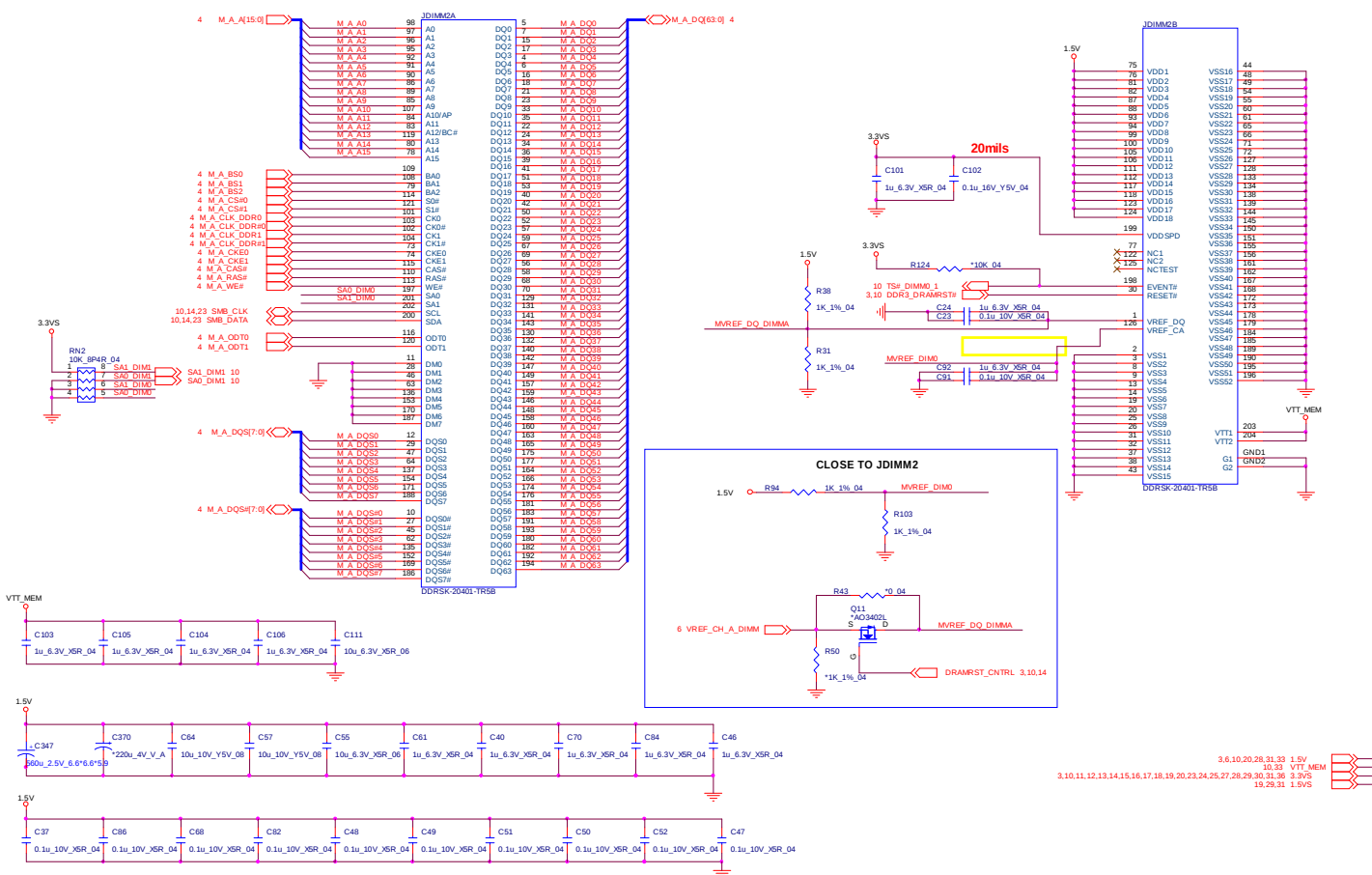
Sheet 8 of 43
Ivy Bridge
Processor 7/7

Schematic Diagrams

DDR3 SO-DIMM_0

SO-DIMM A CHANGE TO STANDARD

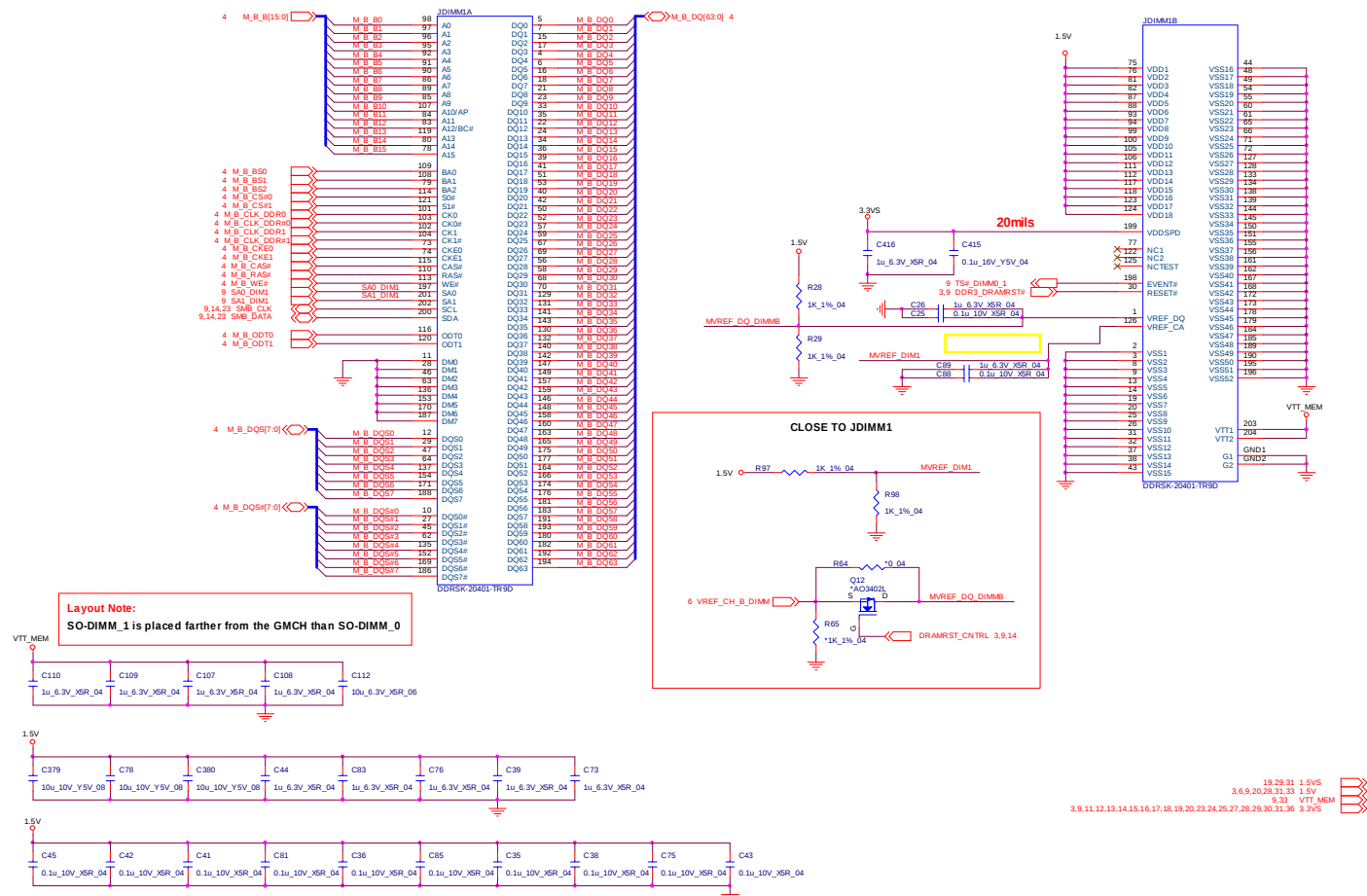
Sheet 9 of 43
DDR3 SO-DIMM_0



DDR3 SO-DIMM_1

SO-DIMM B

CHANGE TO STANDARD



Sheet 11 of 43
LVDS, Inverter



HDMI, CRT B - 13

B.Schematic Diagrams

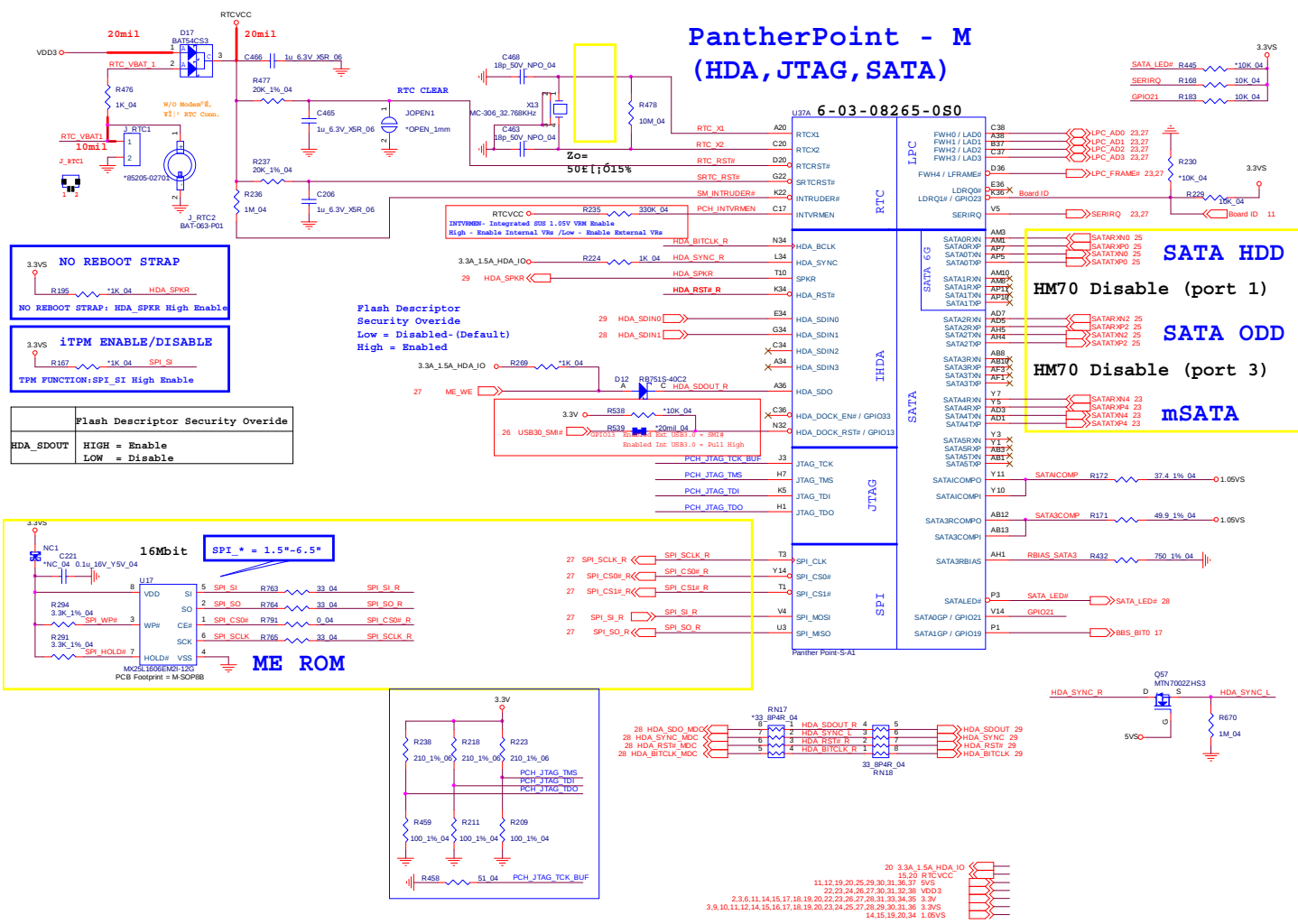
CRT PORT



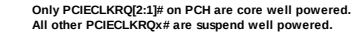
Schematic Diagrams

PantherPoint - M 1/9

Sheet 13 of 43
PantherPoint - M
1/9



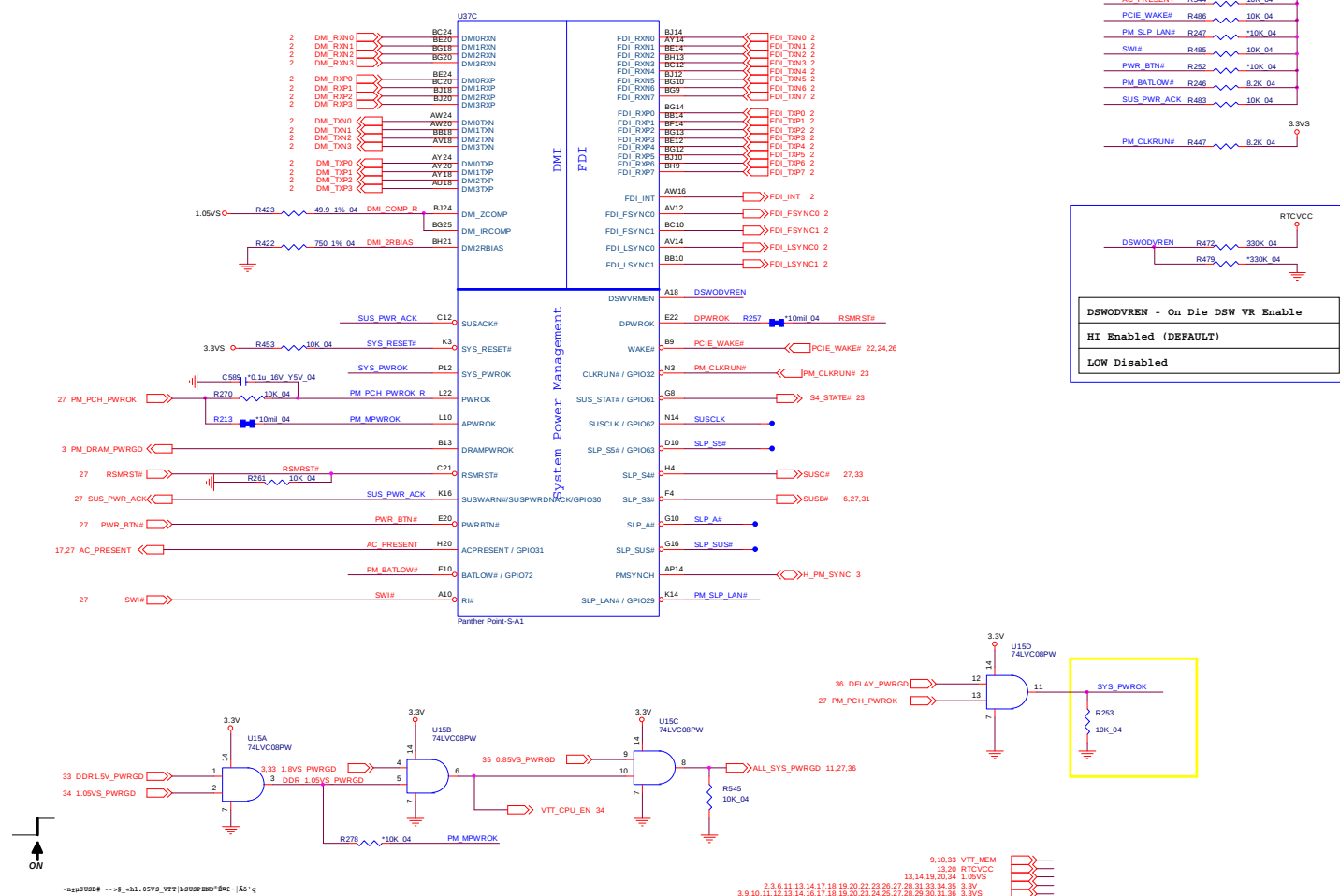
PantherPoint - M (PCI-E,SMBUS,CLK)



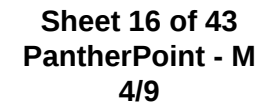
PantherPoint - M 3/9

Sheet 15 of 43
PantherPoint - M
3/9

PantherPoint -M (DMI,FDI,GPIO)



PantherPoint -M
(LVDS,DDI,CRT)



Schematic Diagrams

PantherPoint - M 5/9

Sheet 17 of 43
PantherPoint - M
5/9

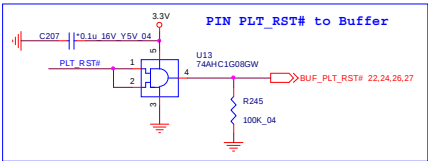
Boot BIOS Strap		
BBS_BIT1	BBS_BIT0	Boot BIOS Location
0	0	LPC
0	1	Reserved (NAND)
1	0	PCI
1	1	SPI

R226 *1K 04 BBS_BIT1
R446 *1K 04 BBS_BIT0 13

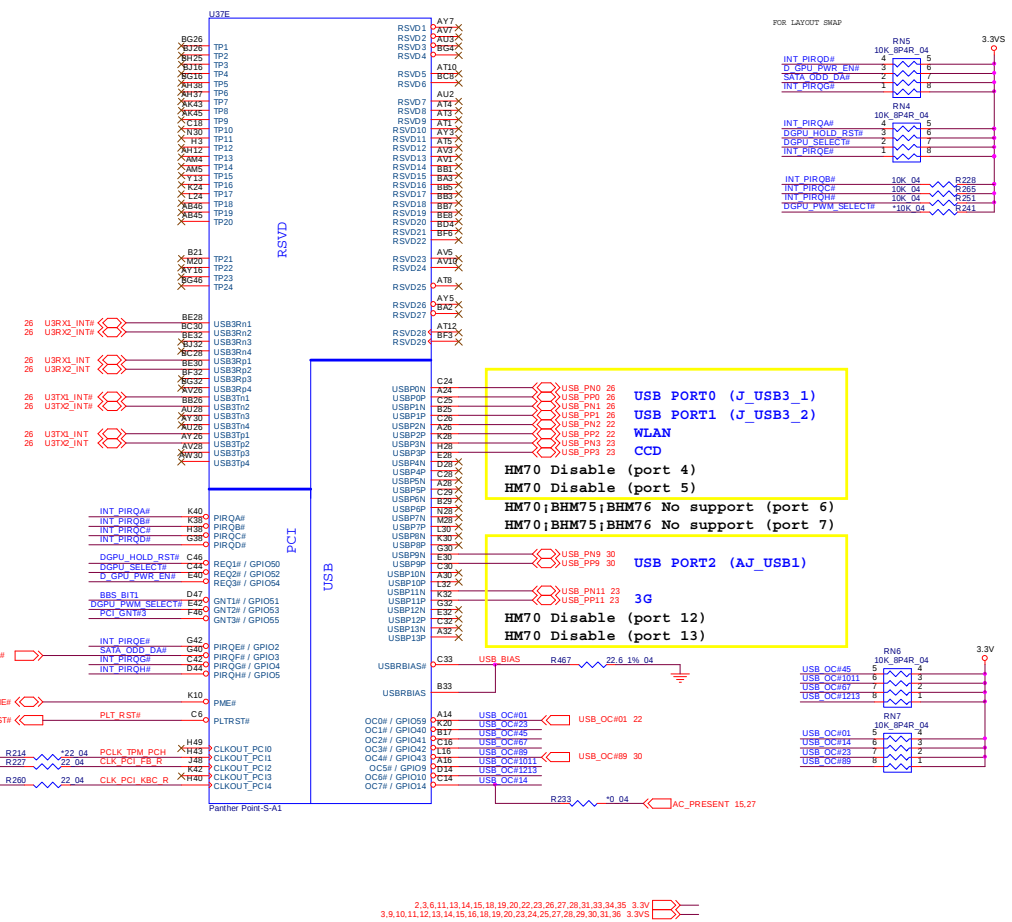
Flash Descriptor security override strap	
PCI_GNT#3	LOW = PCI_GNT#3 swap override HIGH = Default

R225 *1K 04 PCI_GNT#3

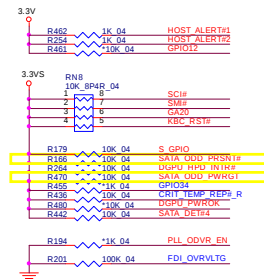
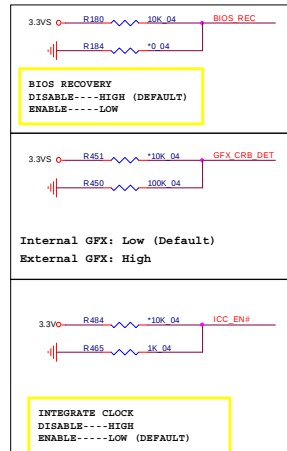
R243 *1K 04 INT_PIRQ#
MPC Switch Control
MPC ON -- 0
MPC OFF -- 1 DEFAULT



PantherPoint -M (PCI,USB,NVRAM)



PantherPoint - M 6/9



PantherPoint - M (GPIO,VSS_NCTF,RSVD)



2,3,5,19,20,34,35,36 VTT_CPU

6,19,33 1.8VS

2,3,6,11,13,14,15,17,19,20,22,23,26,27,28,31,33,34,35 3.3V

3,9,10,11,12,13,14,15,16,17,19,20,23,24,25,27,28,29,30,31,36 3.3VS

19 V_NVRAM_VCCQ

Sheet 18 of 43
 PantherPoint - M
 6/9

PantherPoint - M 7/9

Sheet 19 of 43
PantherPoint - M
7/9

PartherPoint -M (POWER)

POWER

VCC CORE

VCCIO

VCC3

VCC4

VCC5

VCC6

VCC7

VCC8

VCC9

VCC10

VCC11

VCC12

VCC13

VCC14

VCC15

VCC16

VCC17

VCC18

VCC19

VCC20

VCC21

VCC22

VCC23

VCC24

VCC25

VCC26

VCC27

VCC28

VCC29

VCC30

VCC31

VCC32

VCC33

VCC34

VCC35

VCC36

VCC37

VCC38

VCC39

VCC40

VCC41

VCC42

VCC43

VCC44

VCC45

VCC46

VCC47

VCC48

VCC49

VCC50

VCC51

VCC52

VCC53

VCC54

VCC55

VCC56

VCC57

VCC58

VCC59

VCC60

VCC61

VCC62

VCC63

VCC64

VCC65

VCC66

VCC67

VCC68

VCC69

VCC70

VCC71

VCC72

VCC73

VCC74

VCC75

VCC76

VCC77

VCC78

VCC79

VCC80

VCC81

VCC82

VCC83

VCC84

VCC85

VCC86

VCC87

VCC88

VCC89

VCC90

VCC91

VCC92

VCC93

VCC94

VCC95

VCC96

VCC97

VCC98

VCC99

VCC100

Table: CougarPoint power supply range

Min	Voltage	Max
1.00V	1.05V	1.10V
1.43V	1.5V	1.58V
1.71V	1.8V	1.89V
3.14V	3.3V	3.47V
4.75V	5V	5.25V

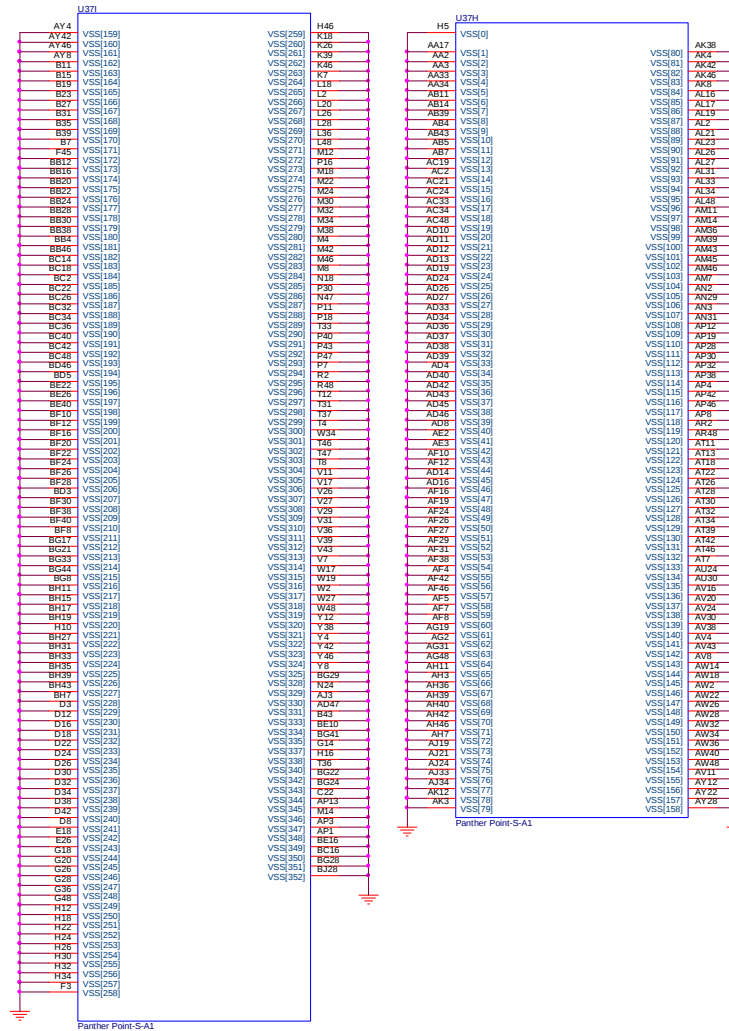
Sheet 20 of 43
PantherPoint - M
8/9

Voltage Rail	Voltage	SO Icomax	Current (A)
V_CPU_10	1.05	1	(mA)
V_VREF	5	1	(mA)
V_VREF	5	1	(mA)
Vcc3_3	3.3	3	0.266
VccADAC3	1.05	1	(mA)
VccADPLL4	1.05	0.8	
VccADPLL3	1.05	0.8	
VccCore	1.05	1.3	
VccDMI	1.1	0.042	
VccIO	1.05	2.925	
VccASW	1.05	1.01	
VccSPI	3.3	0.020	
VccSW3_3	3.3	2	(mA)
VccPFERR	1.8	0.15	
VccBus1_3	3.3	0.097	
VccBusEDA	3.3	1	(mA)
VccVRM	1.5	0.16	
VccCLKDMI	1.05	0.02	
VccSSC	1.05	0.095	
VccDPPCLKM	1.05	0.055	
VccLVDS	3.3	1	(mA)
VccTX_LVDS	1.8	0.06	

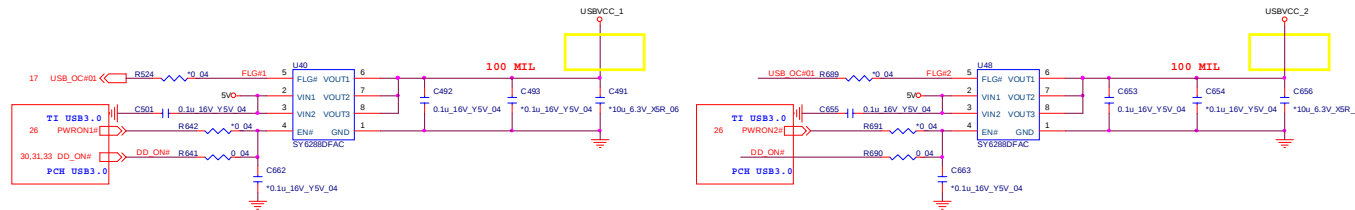


PantherPoint - M 9/9

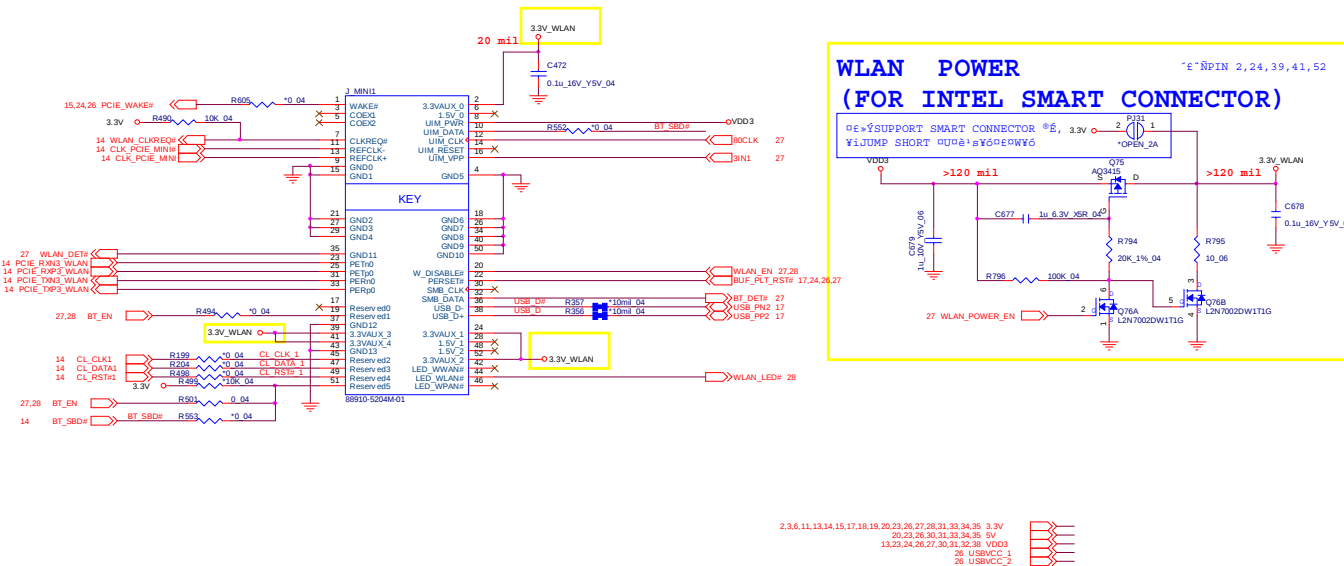
PantherPoint -M (GND)



USB 3.0 Power

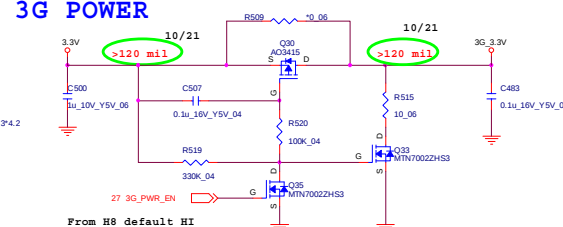


MINI CARD WLAN



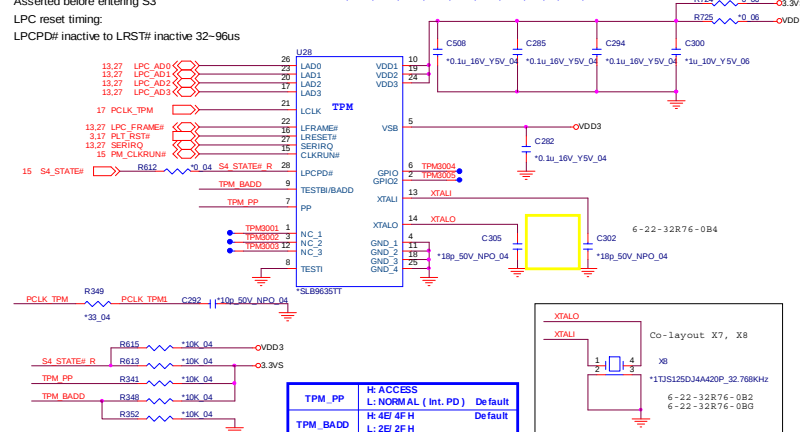
B. Schematic Diagrams

MINI CARD 3G (Port 6)

[illegible]

TPM 1.2

W/ TPM =WV6:
C282,C285,C294,C508,C302,C305,R348,R615,U28,X8,R214,R725

[illegible]

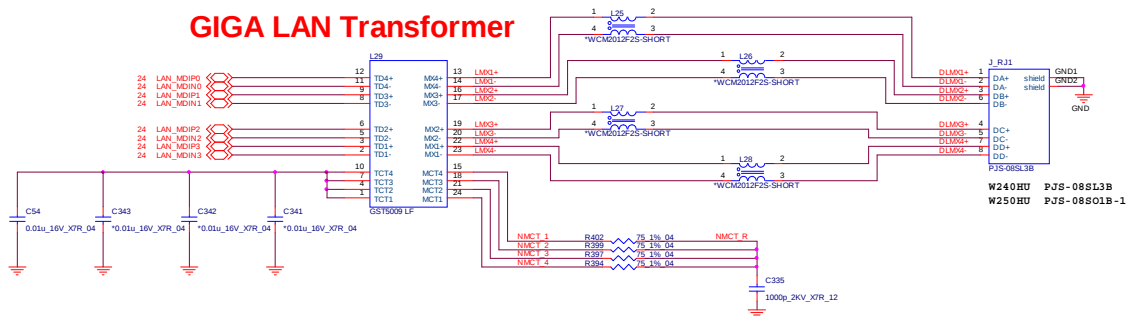
Sheet 24 of 43
Card Reader, LAN
RTL8411



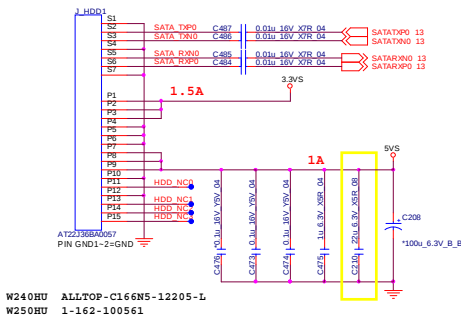
Schematic Diagrams

LAN (RTL8411), SATA HDD, ODD

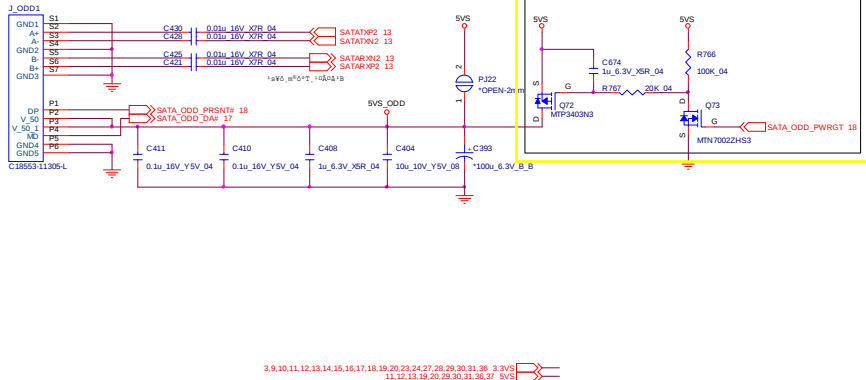
Sheet 25 of 43
LAN(RTL8411),
SATA HDD, ODD



SATA HDD



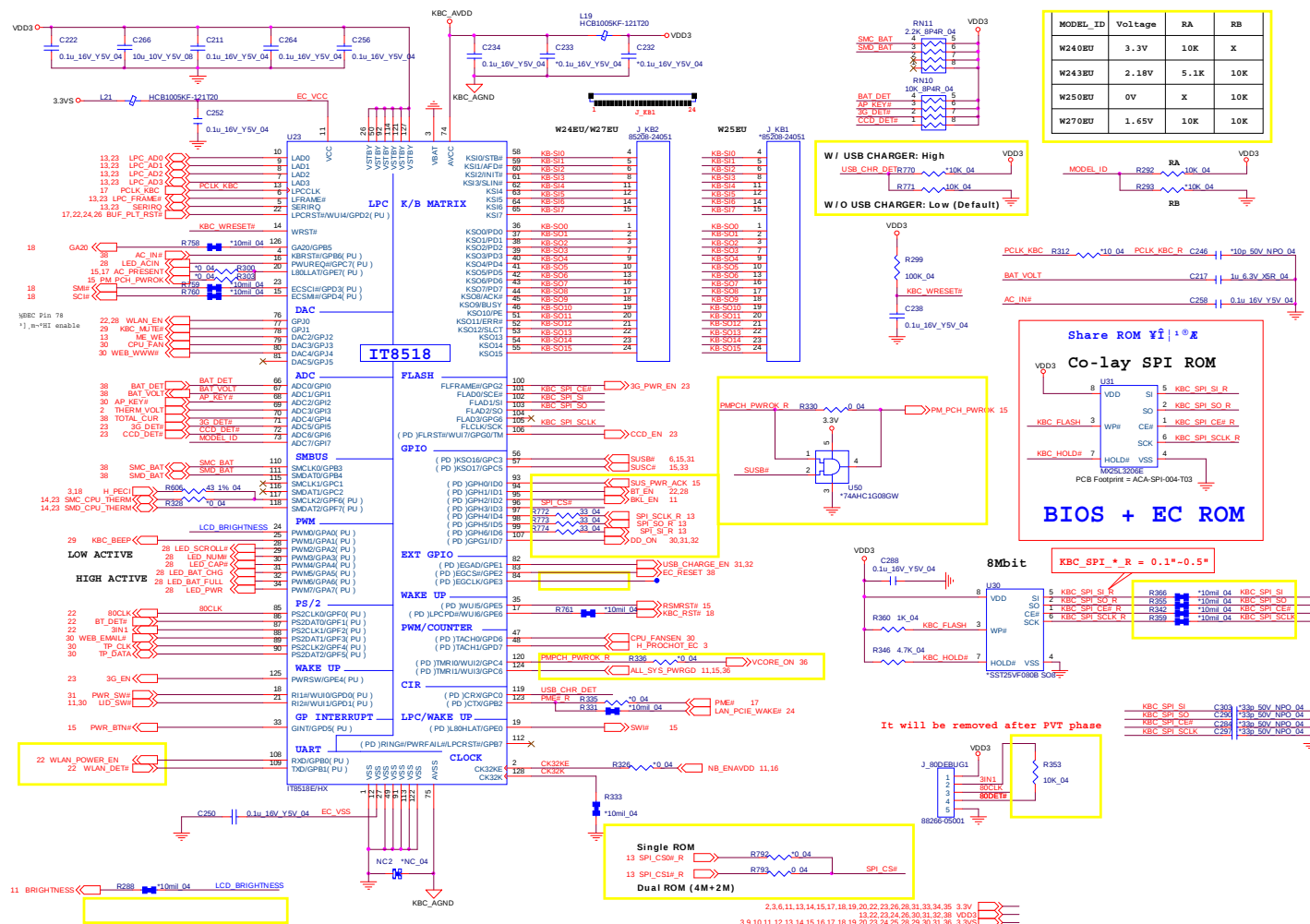
SATA ODD



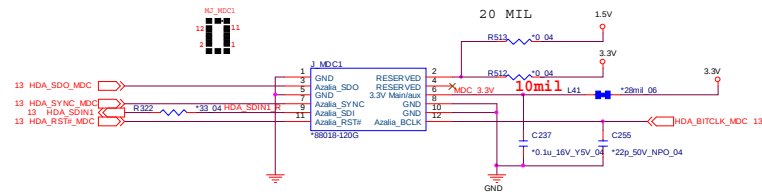
Sheet 26 of 43
USB 3.0 TI
TUSB7320



Sheet 27 of 43
KBC-ITE IT8518



MDC



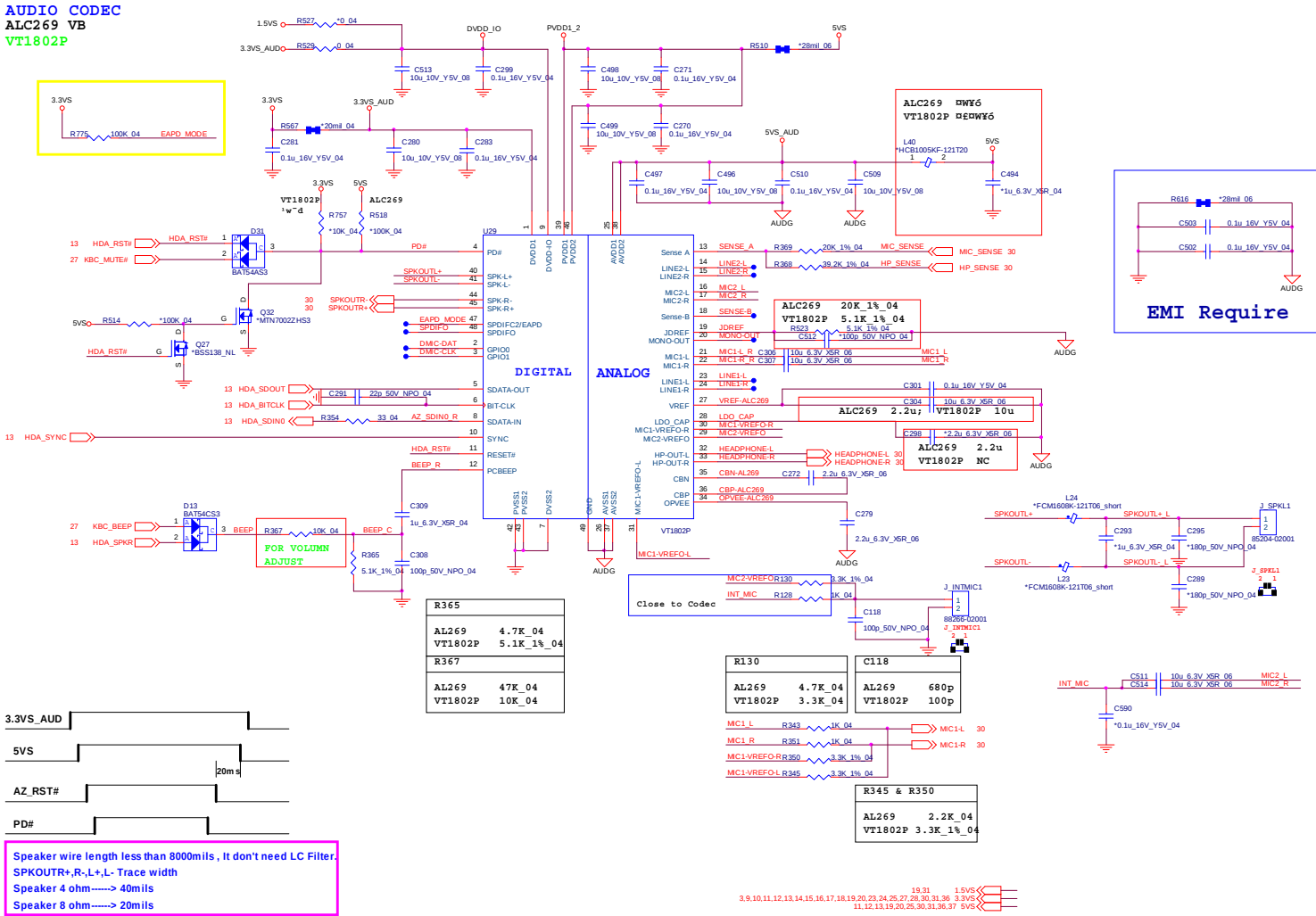
The image contains several electronic circuit diagrams:

- HDD/ODD LED:** A simple circuit with a 3.3V source, resistor R2 (220_04), and LED D2 (RY-SPT7Y/G34-3M).
- NUM LOCK LED:** Similar to the HDD/ODD LED, with resistor R3 (220_04) and LED D3 (RY-SPT7Y/G34-3M).
- CAPS LOCK LED:** Similar to the NUM LOCK LED, with resistor R4 (220_04) and LED D4 (RY-SPT7Y/G34-3M).
- SCROLL LOCK LED:** Similar to the CAPS LOCK LED, with resistor R5 (220_04) and LED D5 (RY-SPT7Y/G34-3M).
- BT LED:** A more complex circuit involving a BT module (W249E=WW6), a 3.3V source, and various resistors (R6, R7, 220_04). It also includes a capacitor C1 (10mF_04) and a diode D1 (KPB-3025YSGC).
- POWER ON LED:** A circuit with a 3.3V source, resistor R14 (220_04), and LED D14 (KPB-3025YSGC).
- BAT LED:** A circuit with a 3.3V source, resistor R15 (220_04), and LED D15 (KPB-3025YSGC).
- LED PWR, LED ACIN, LED BAT FULL, LED BAT CHG:** A set of four LEDs connected to a common ground through resistors R362, R361, R363, and R364 (all 220_04).
- For W24xx serial:** A diagram showing a J1 header with pins 1 through 8, connected to various LEDs.
- For W25xx/W27xx serial:** A diagram showing a J1 header with pins 1 through 8, connected to various LEDs.

3,6,9,10,20,31,33 1.5V
2,3,6,11,13,14,15,17,18,19,20,22,23,26,27,31,33,34,35 3.3V
3,9,10,11,12,13,14,15,16,17,18,19,20,23,24,25,27,29,30,31,36 3.3VS

Audio Codec ALC269

Sheet 29 of 43
Audio Codec
ALC269



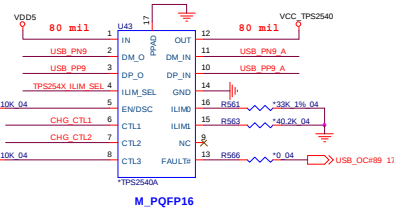
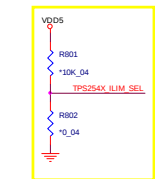
USB Charger, Fan, TP, Multi-Conn

W/O USB CHARGER



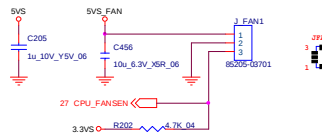
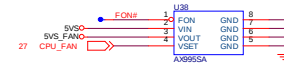
ILIM_SEL
(FOR TP82543/TP82540)
ILIM_SEL=HI, FOR TP82543
ILIM_SEL=LOW, FOR TP82540

WITH USB CHARGER

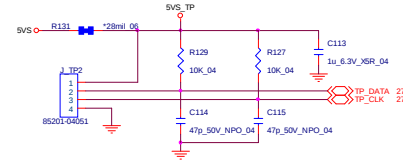


CTL1	CTL2	CTL3:	0	0	0----> Out discharge, power switch Off
CTL1	CTL2	CTL3:	0	x	1----> Dedicated charging port, auto-detect
CTL1	CTL2	CTL3:	1	0	1----> Dedicated charging port, Divider Mode only
CTL1	CTL2	CTL3:	1	1	1----> Charging downstream port, BC1.2.

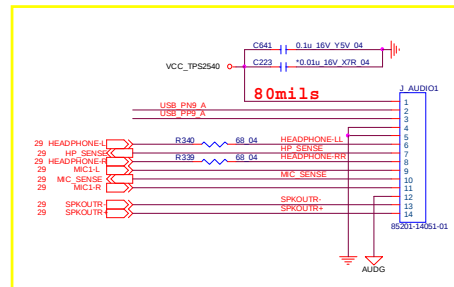
FAN CONTROL



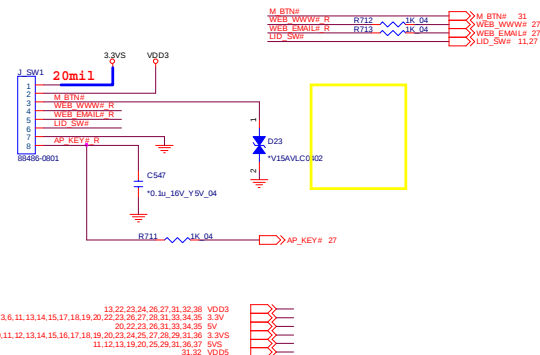
CLICK B'd CONN



Audio B'd CONN



POWER SWITCH B'd CONN



Sheet 30 of 43
USB Charger, Fan,
TP, Multi-Conn

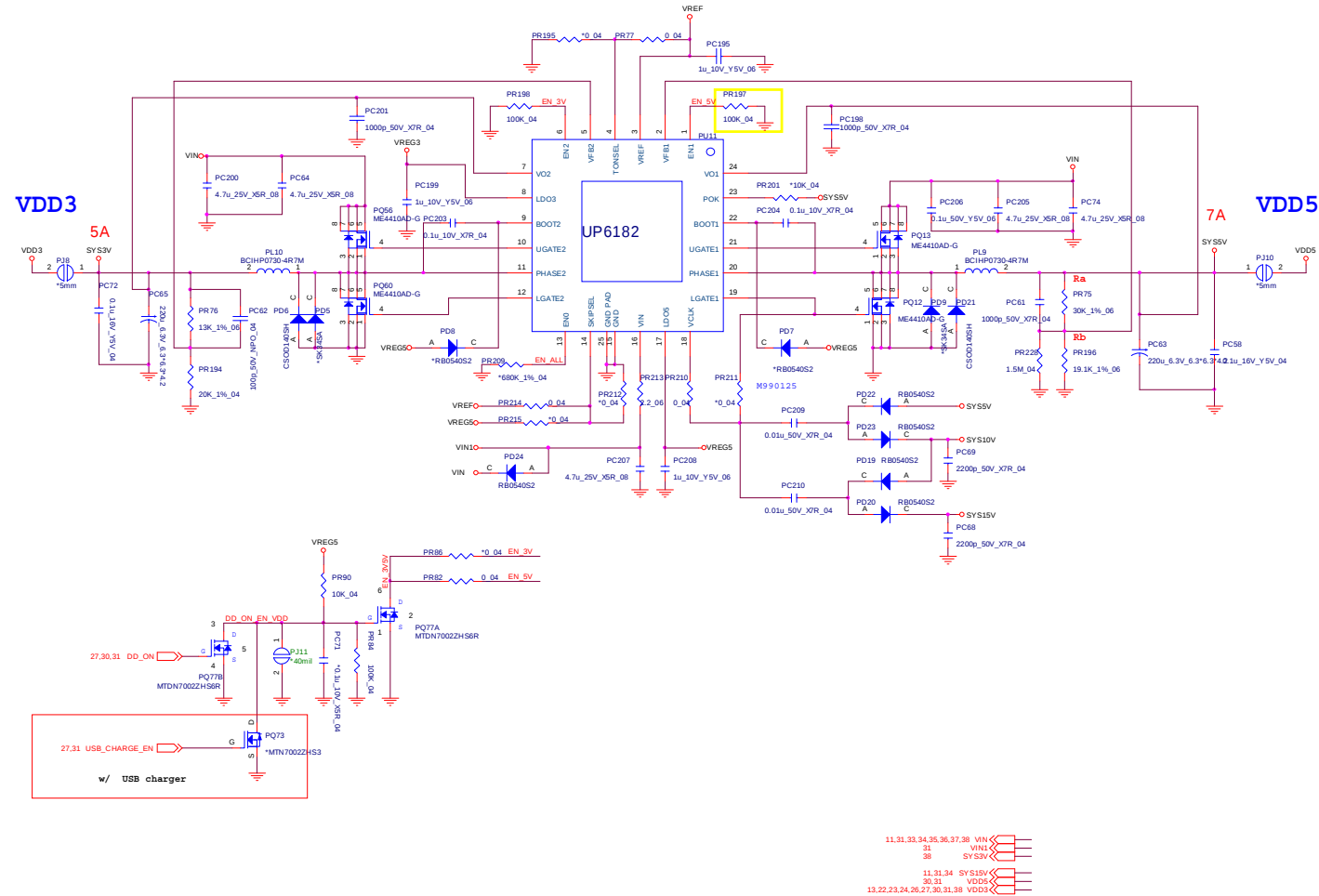
System Power

Sheet 31 of 43
System Power



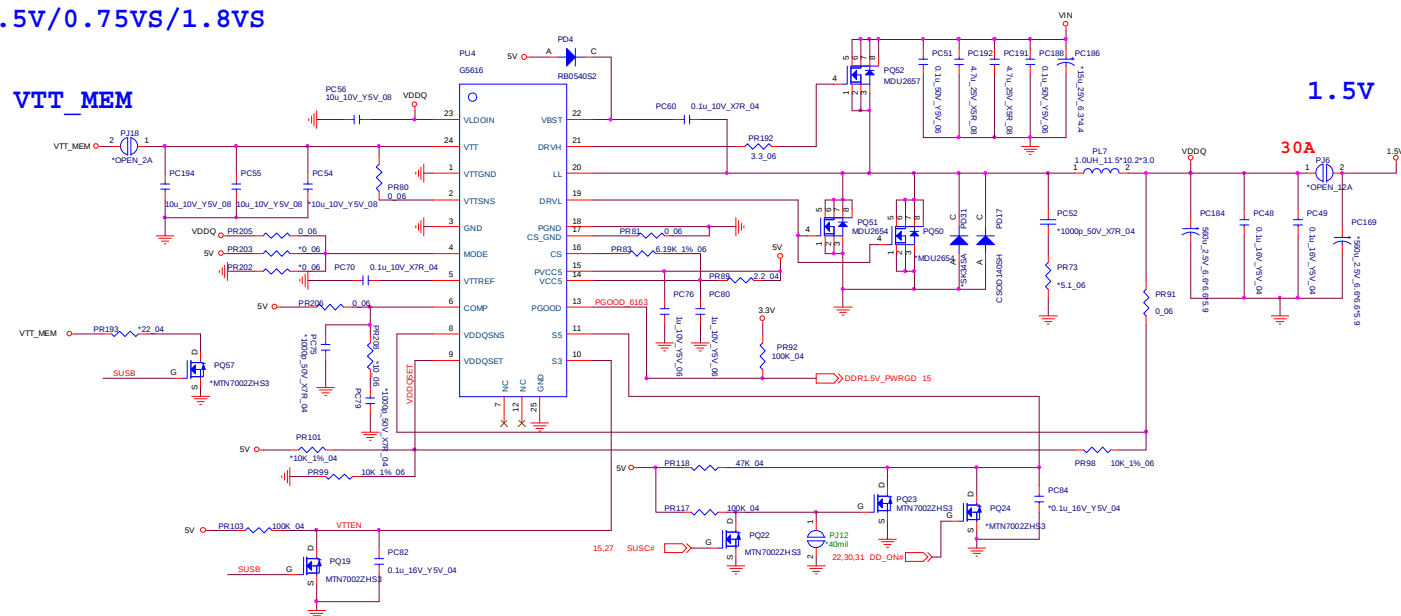
VDD3, VDD5

VDD3/VDD5

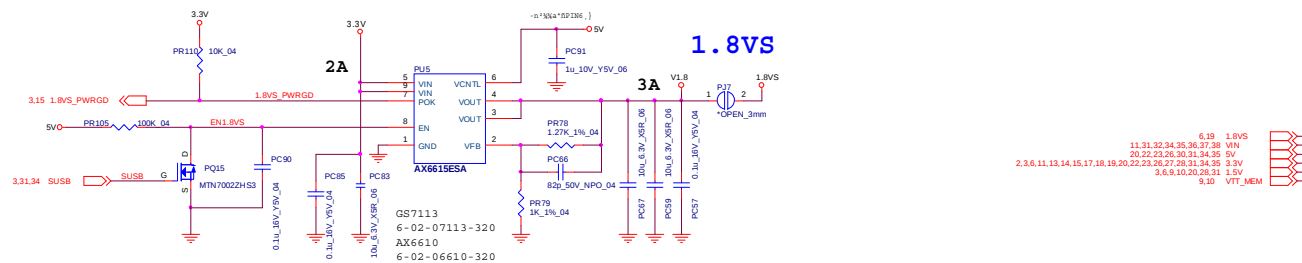
Sheet 32 of 43
VDD3, VDD5

Power 1.5V/0.75V/1.8VS

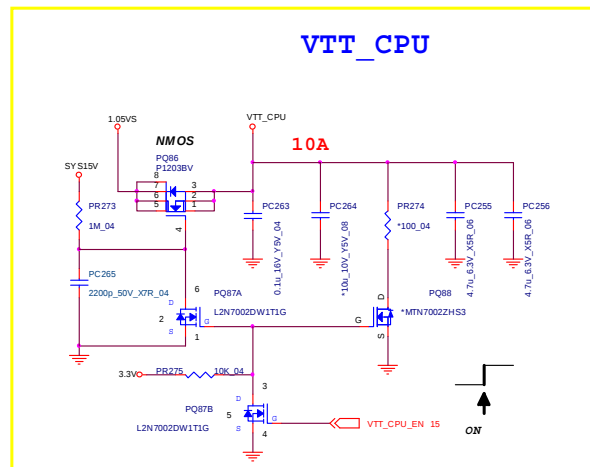
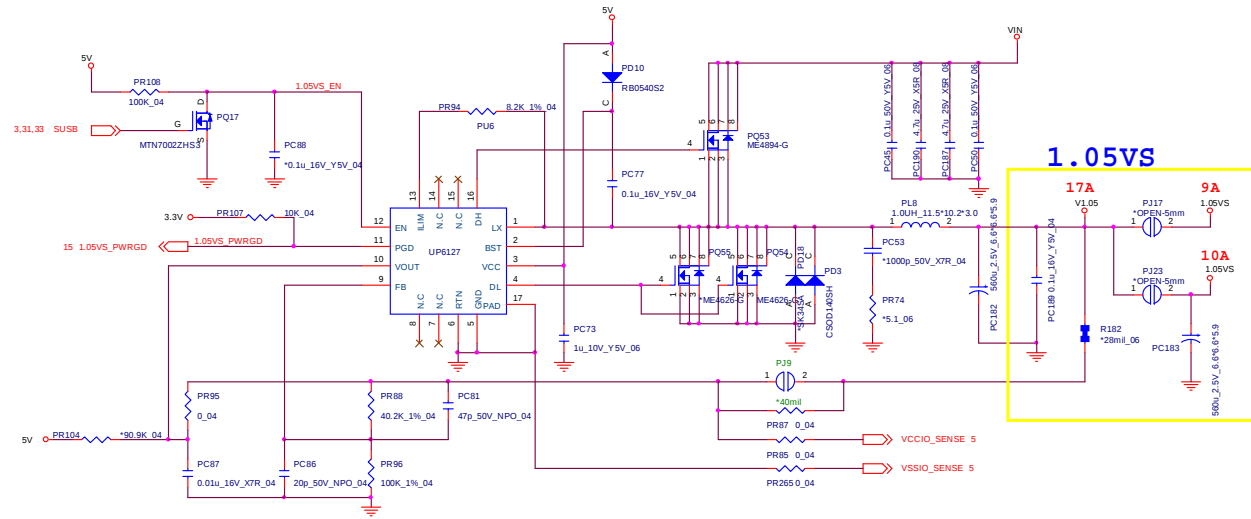
1.5V/0.75VS/1.8VS



1.5V_CTRL1	1.5V_CTRL0	Voltage
1	1	1.55V
1	0	1.60V
0	1	1.65V
0	0	1.70V



Power 1.05VS

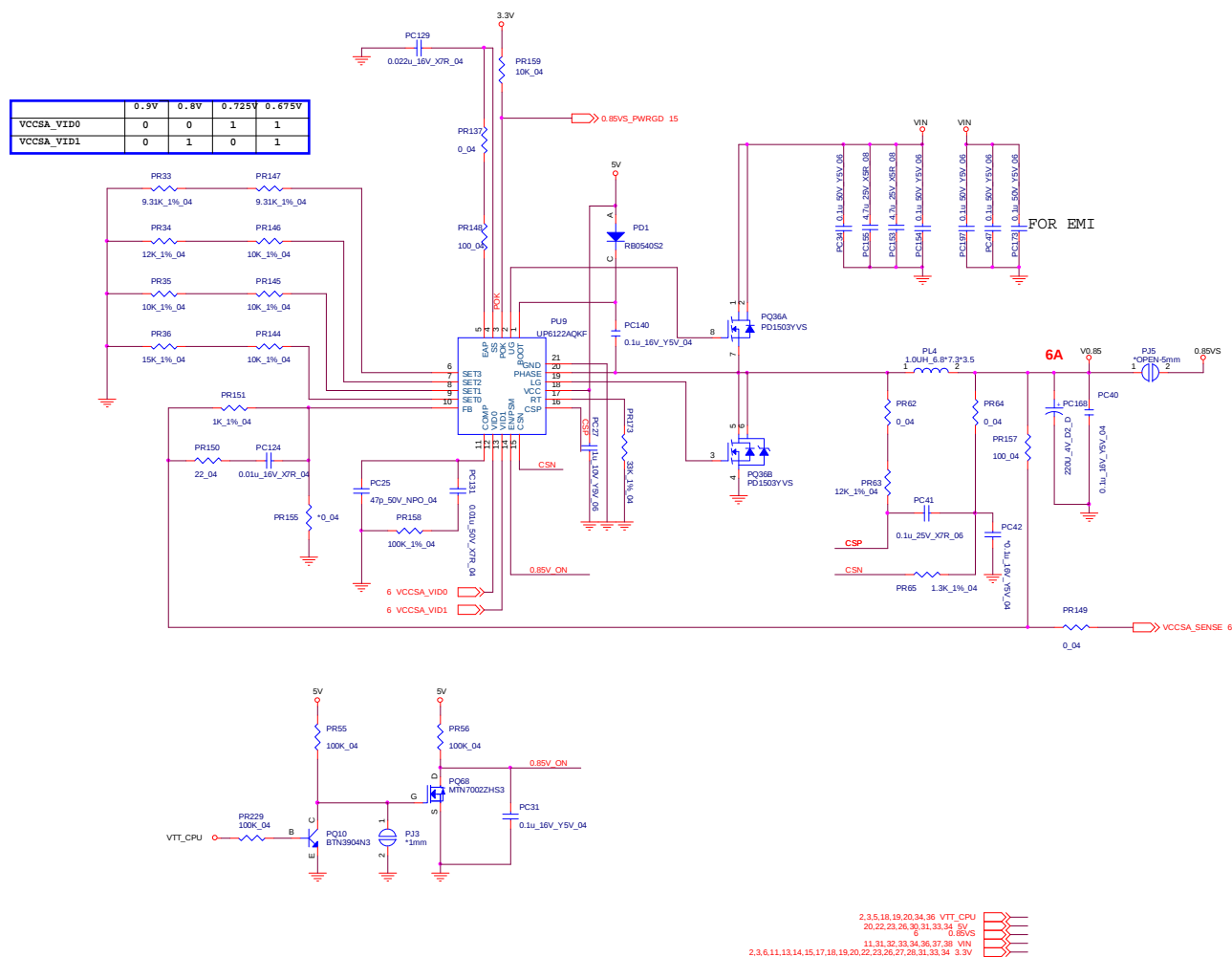


2,3,5,18,19,20,35,36	VTT_CPU
13,14,15,19,20	1.05VS
6,35	0.05VS
3,9,10,11,12,13,14,15,16,17,18,19,20,23,24,25,27,28,29,30,31,36	3.3VS
2,3,6,11,13,14,15,17,18,19,20,22,23,26,27,28,31,33,35	3.3V
20,22,23,26,30,31,33,35	5V
11,31,32,33,35,36,37,38	VIN
11,31,32	SY515V

Sheet 34 of 43
Power 1.05VS

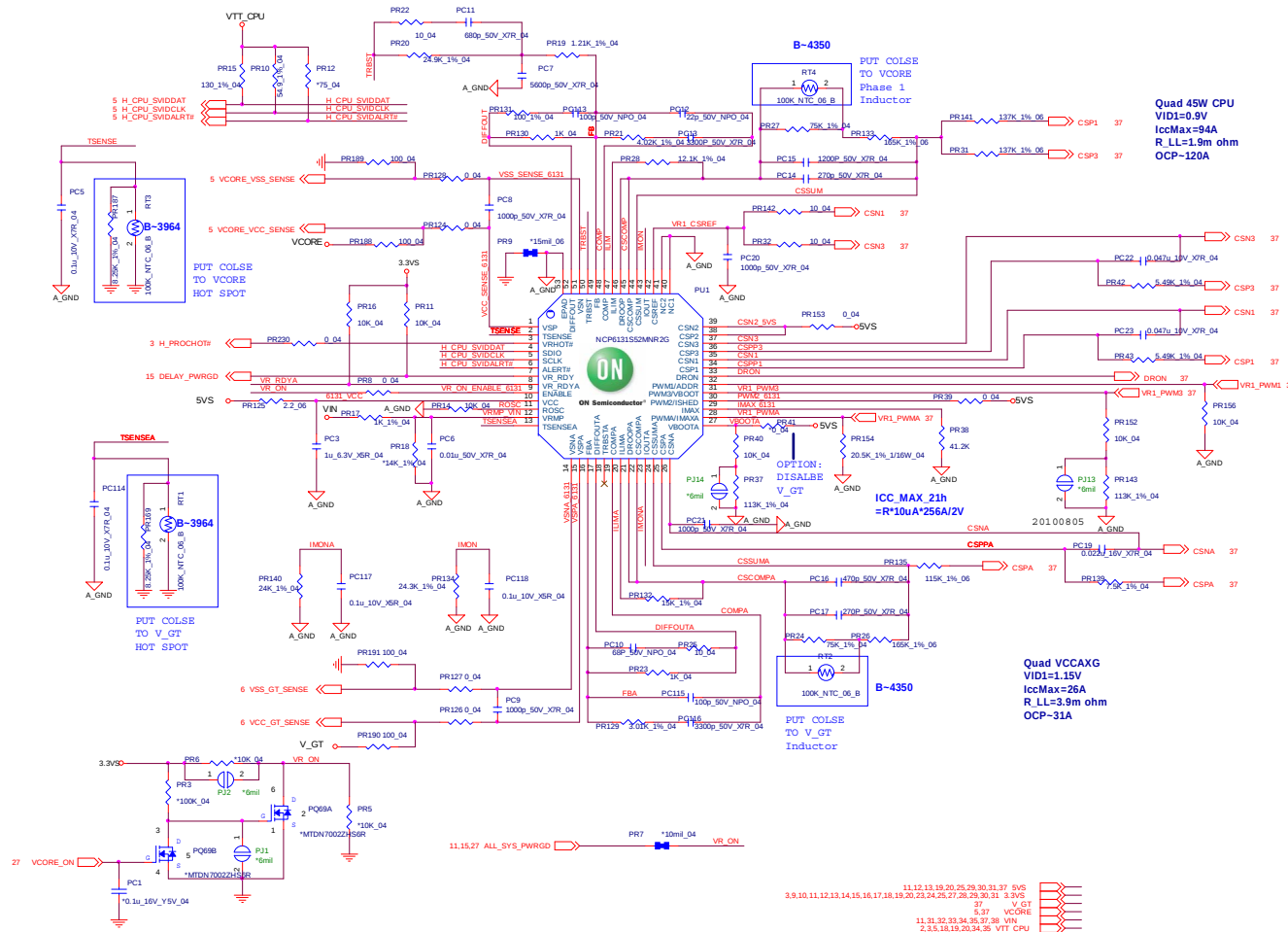
Power 0.85VS

Sheet 35 of 43
Power 0.85VS



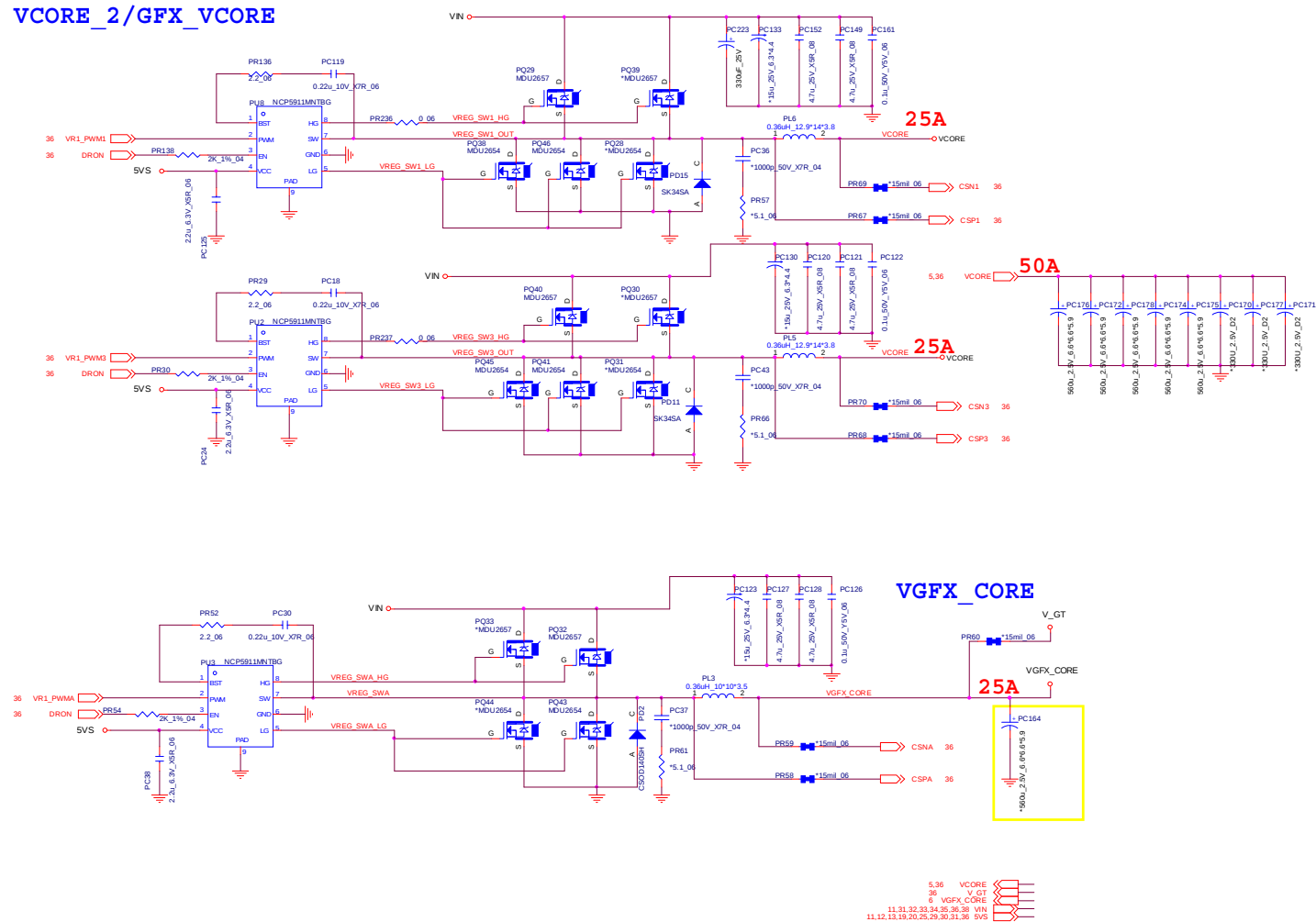
B.Schematic Diagrams

Sheet 36 of 43
Power V-Core1



Power V-Core2

VCORE 2/GFX VCORE



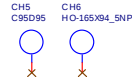
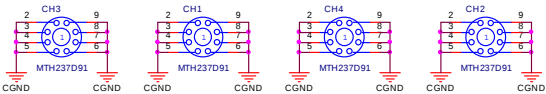
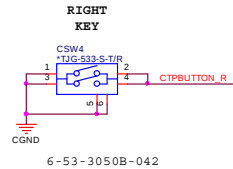
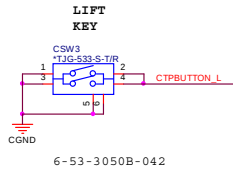
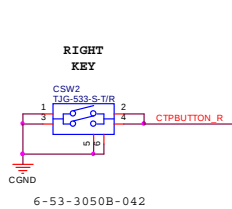
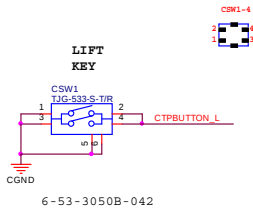
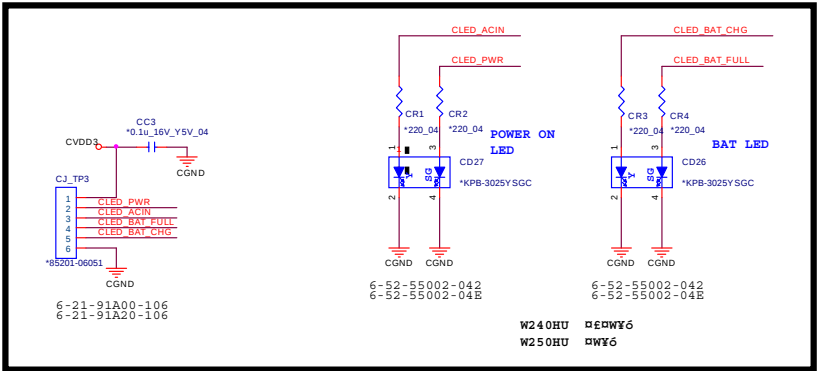
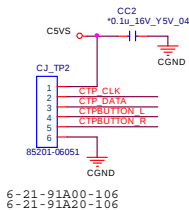
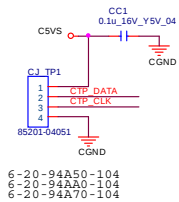
SMART CHARGER



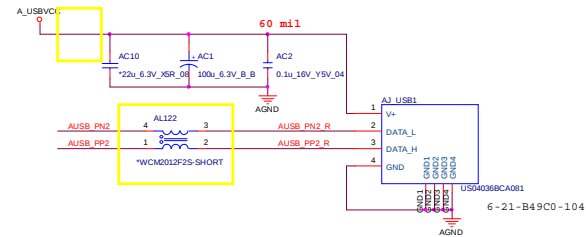
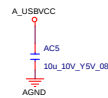
Schematic Diagrams

Click Board

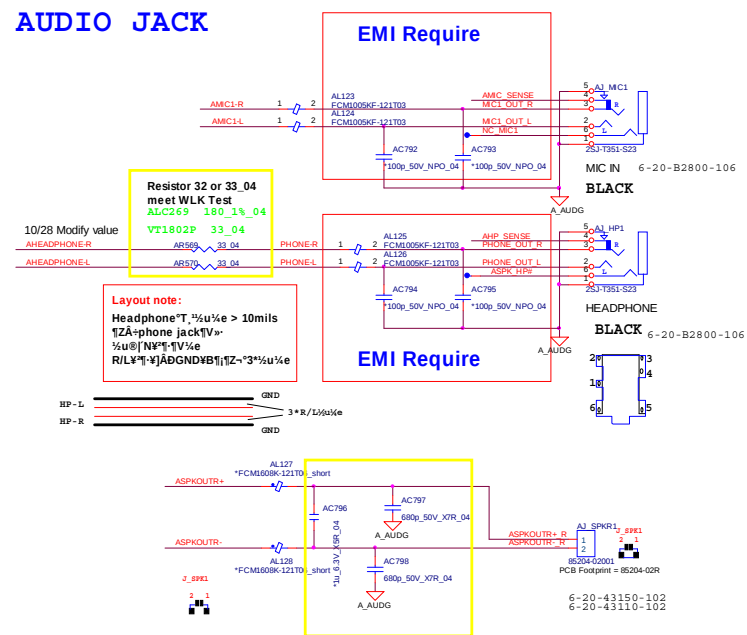
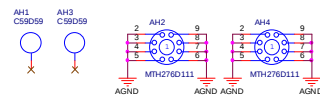
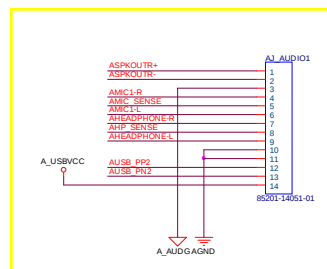
Sheet 39 of 43
Click Board



USB PORT



AUDIO JACK



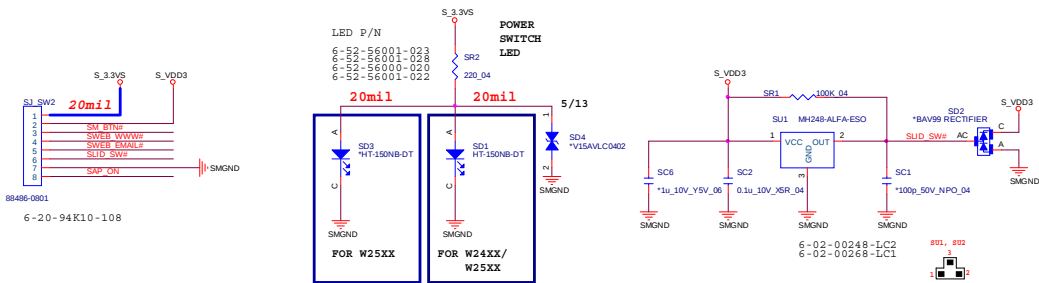
Audio Board/USB B - 41

Schematic Diagrams

Power Switch & LID Board

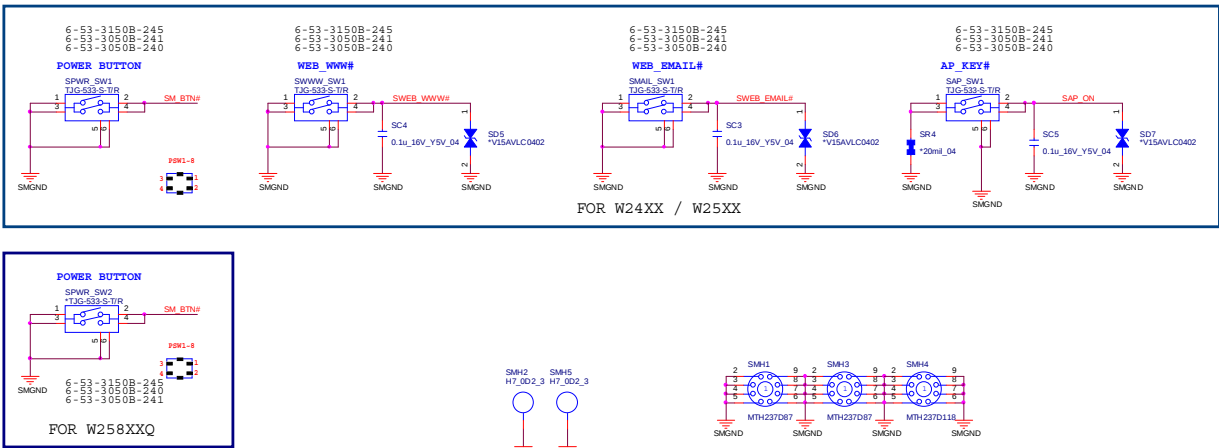
POWER SW & LED & HOT KEY

LID SWITCH IC



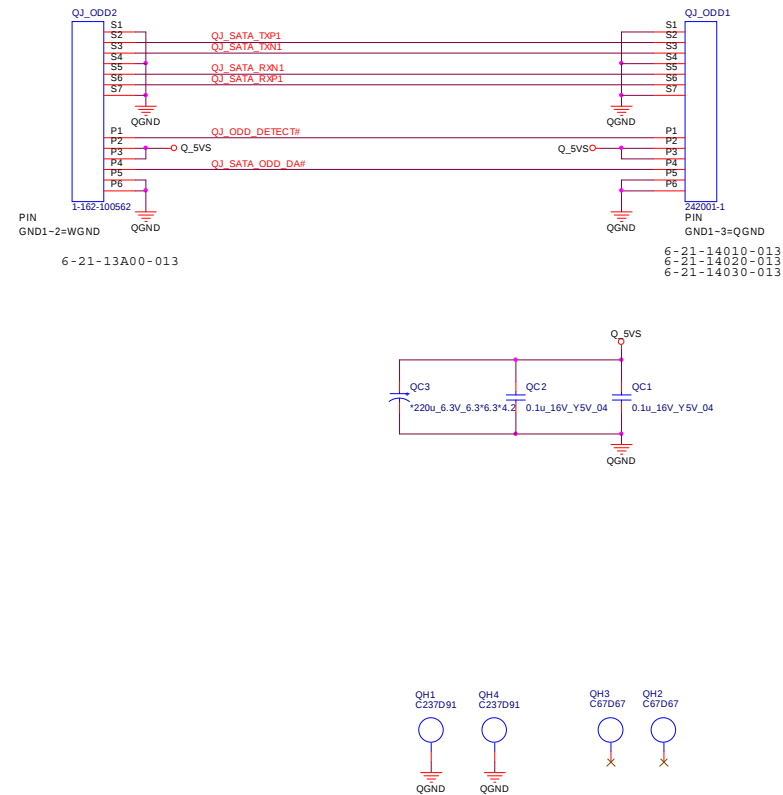
Sheet 41 of 43
Power Switch & LID
Board

HOT KEY



External ODD Board

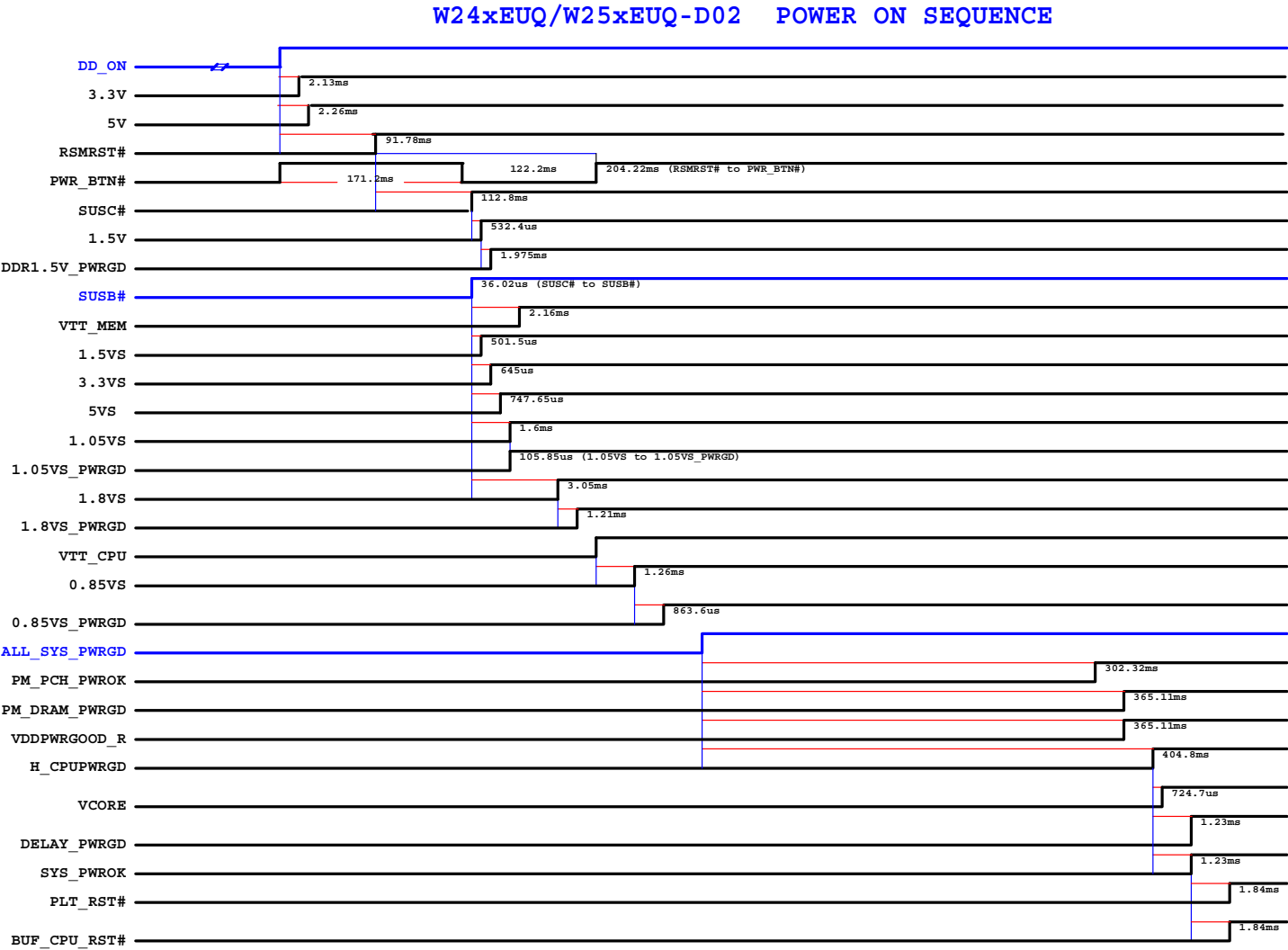
ODD BOARD FOR E5120Q



Sheet 42 of 43
External ODD
Board

Power Sequence

Sheet 43 of 43
Power Sequence



Appendix C: Updating the FLASH ROM BIOS

To update the FLASH ROM BIOS, you must:

- Download the BIOS update from the web site.
- Unzip the files onto a bootable CD/DVD/USB Flash Drive.
- Reboot your computer from an external CD/DVD/USB Flash Drive.
- Use the flash tools to update the flash BIOS using the commands indicated below.
- Restart the computer booting from the HDD and press **F2** at startup enter the BIOS.
- Load setup defaults from the BIOS and save the default settings and exit the BIOS to restart the computer.
- After rebooting the computer you may restart the computer again and make any required changes to the default BIOS settings.

Download the BIOS

1. Go to www.clevo.com.tw and point to **E-Services** and click **E-Channel**.
2. Use your user ID and password to access the appropriate download area (BIOS), and download the latest BIOS files (the BIOS file will be contained in a batch file that may be run directly once unzipped) for your computer model (see sidebar for important information on BIOS versions).

Unzip the downloaded files to a bootable CD/DVD/ or USB Flash drive

1. Insert a bootable CD/DVD/USB flash drive into the CD/DVD drive/USB port of the computer containing the downloaded files.
2. Use a tool such as Winzip or Winrar to unzip all the BIOS files and refresh tools to your bootable CD/DVD/USB flash drive (you may need to create a bootable CD/DVD with the files using a 3rd party software).

Set the computer to boot from the external drive

1. With the bootable CD/DVD/USB flash drive containing the BIOS files in your CD/DVD drive/USB port, restart the computer and press **F2** (in most cases) to enter the BIOS.
2. Use the arrow keys to highlight the **Boot** menu.
3. Use the “+” and “-” keys to move boot devices up and down the priority order.
4. Make sure that the CD/DVD drive/USB flash drive is set first in the boot priority of the BIOS.
5. Press **F10** to save any changes you have made and exit the BIOS to restart the computer.



BIOS Version

Make sure you download the latest correct version of the BIOS appropriate for the computer model you are working on.

You should only download BIOS versions that are **V1.01.XX or higher** as appropriate for your computer model.

Note that BIOS versions are not backward compatible and therefore **you may not downgrade your BIOS to an older version** after upgrading to a later version (e.g if you upgrade a BIOS to ver 1.01.05, you **MAY NOT** then go back and flash the BIOS to ver 1.01.04).

BIOS Update

Use the flash tools to update the BIOS

1. Make sure you are not loading any memory management programs such as HIMEM by holding the **F8** key as you see the message “**Starting MS-DOS**”. You will then be prompted to give “**Y**” or “**N**” responses to the programs being loaded by DOS. Choose “**N**” for any memory management programs.
2. You should now be at the DOS prompt e.g: **DISK C:\>** (C is the designated drive letter for the CD/DVD drive/USB flash drive).
3. **Type the following command** at the DOS prompt:

C:\> Flash.bat

4. The utility will then proceed to flash the BIOS.
5. You should then be prompted to press any key to restart the system or turn the power off, and then on again but make sure you remove the CD/DVD/USB flash drive from the CD/DVD drive/USB port before the computer restarts.

Restart the computer (booting from the HDD)

1. With the CD/DVD/USB flash drive removed from the CD/DVD drive/USB port the computer should restart from the HDD.
2. Press **F2** as the computer restarts to enter the BIOS.
3. Use the arrow keys to highlight the **Exit** menu.
4. Select **Load Setup Defaults** (or press **F9**) and select “**Yes**” to confirm the selection.
5. Press **F10** to save any changes you have made and exit the BIOS to restart the computer.

Your computer is now running normally with the updated BIOS

You may now enter the BIOS and make any changes you require to the default settings.

www.s-manuals.com